

Supplementary file S3

Mammal-AMBN-AA-ALn.txt

CLUSTAL format alignment by MAFFT (v7.351b)

Tursiops

M-----

Sus

M-----

Bos_taurus

M-----

Ursus

M-----

Equus

M-----

Homo

M-----

Cavia

M-----

Rattus

M-----

Mus

M-----

Monodelphis M-----AREQNV-----

EKRREDSVQSL-----GVL P

Ornithorhynchus

MIPLIVAQVGAQGAILSSEELIFTGLFIQPLAPGRMAPIGQDNPEDQDQVLPTGQSGMSP

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Tursiops

PALKIPLFKMKDMILILCLL

Sus

PALKIPLFKMKDMVLILCLL

Bos_taurus

PALKIPLFKMKDMILILCLL

Ursus

SALKIPLSKMKDLILILCLL

Equus

PALKIPLFKMKDLVLILCLL

Homo

SASKIPLFKMKDLILILCLL

Cavia

SPSKIPLFKMKDLMLFSLSL
 Rattus -----
 SASKIPLFKMKGLLLFSLSV
 Mus -----
 SASKIPLFKMKGLILFSLSV
 Monodelphis -----PLTRS-----LDWYLQALG-----
 TRLKPVVKKSFLFKMKDLLLLMLCLL
 Ornithorhynchus
 ATQDPPEDQPPTASGLLDESEVTLPANLQGVSLTTEESTTEEPRGPTLKMENLVLILSLF

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Tursiops KMSSAVP---VFPQQPGT-----
 PGMASLSLETMRQLGSLQGLNMLSQYSRFGFGKSFNS
 Sus KMSSAVP---AFPRQPGT-----
 PGVASLSLETMRQLGSLQGLNMLSQYSRFGFGKSFNS
 Bos_taurus KMSSAVP---AFPQQPGI-----
 PGMASLSLETMRQLGSLQGLNLLSQYSRFGFGKSFNS
 Ursus GMSSAVP---VFPRQPGT-----
 PGMASLSLETMRQLGSLQGLNMLSQYSRFGFGKSFNS
 Equus EMGSAVP---AFPRQPGI-----
 PGMASLSLETMRQLGSLQGLNMLSQYSRFGYGKSFNS
 Homo EMSFAVP---FFPQQSGT-----
 PGMASLSLETMRQLGSLQRLNLTLSQYSRYGFGKSFNS
 Cavia KISFAVP---
 AFPQQPGAPNMAPPGMASLSLETMRQLGSLQGLNALSQYSRFGFGKSLNS
 Rattus KMSLAVP---
 AFPQQPGAQGMAPPGMASLSLETMRQLGSLQGLNALSQYSRLGFGKALNS
 Mus KMSLAVP---
 AFPQQPGAQGMAPPGMASLSLETMRQLGSLQGLNALSQYSRLGFGKALNS
 Monodelphis GTSFAVPIKQVYPQAAA-----
 TGLGSLLETMRQLGNLNLNLLSQFSRFGYGKPFST
 Ornithorhynchus GTSFAIP---VFLQPGGP-----PGMGSLLETMRHLGN---
 LNLLPQFSRFGFGKQFNS

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Tursiops
 LWMHGLLPPHSSFPWMPREHETQQYEYSLPVHPPPLPSQPSLQPPQPGQKPFLQPTVVVT
 Sus
 LWMHGLLPPHSSFQWMPREHETQQYEYSLPVHPPPLPSQPSLQPPQPGQKPFLQPTVVVT
 Bos_taurus LWMNGLLPPHSSFPWMPREHETQ-----
 QPSLQPPQPGQKPFLQPTVVVT
 Ursus
 LWLHGLLPPHSSFPWMPREHETQQYEYSLPVHPPPLPSQPSLQPPQPGQKPFLQSAIVT
 Equus
 LWMNGLLPPPSSFPWMPREHETQQYEYSLPVHPPPLPSQPSLQPPQPGQKAFLOPTIVT

Homo
 LWMHGLLP HSSLP WMRPREHETQQYEYSLPVHPPPLPSQPSLKPQQPGLKPFLLQSAAT
 Cavia
 LWLQGLLP PSSF PWLRPREHETQQYEYSPVHPPPLPSQPSQPPQPGMKHFQQPTATP
 Rattus
 LWLHGLLP PHSFPWIGPREHETQQYEYSLPVHPPPLPSQPSLQPHQPGLKPFLLQPTAAT
 Mus
 LWLHGLLP PHSFPWIGPREHETQQYEYSLPVHPPPLPSQPSLQPHQPGLKPFLLQPTAAT
 Monodelphis
 LWMHGLLP HSSF PPMQOREHETQQYEYALPVHPPPLPSQQTLPQKSGQKSFLQSSPAP
 Ornithorhynchus
 LWMHGFL PPHSNYPWLS PRDQETQQYEYALPVHPPRPSQRTLPQPPKQNAFLPPTVAP
 *:::*** .. *: *::***
 * : :* :. : * ..

Tursiops	S-VQNT-VQKGIPQPP IYPGHPPLQQSEGPMI-Q-
	QVAPSEKPSKTELPGMNFADPQDPS
Sus	S-IQNP-VQKGVQPP IYQGHPPLOQVEGPMVQQ-
	QVAPSEKPPEAELPGLDFADPQDPS
Bos_taurus	S-MQNA-VQKGVQPP IYQGHPPLOQAEGPMVEQ-
	QVAPSEKPPTTELPGMDFADLQDPP
Ursus	D-IRDT-APKGGPQRPVYQGQPPLQKQEGPMLEQ-
	QVAPSDKPPKAELPGMDFADEPGPS
Equus	SGIQDT-IQKGGHQP PVYQRPPLQOQSEGPMVQQ-
	QVAPSDKPPKAELREMDFGPQDPQ
Homo	T-NQAT-ALKEALQPP IHLGHLPLQEGELPLVQQ-
	QVAPSDKPPKPELPGVDFADPQGPS
Cavia	A-IQDT-PQKAGQPPMHPRQLPLKDAELPEAHE-
	QVAPTEMLNPEL PVLDFADPQIPS
Rattus	G-VQVT-
	PQKPGPHPPMHPGQLPLQEGELIAPDEPQVAPSENPTPEVPIMDFADPQFPT
Mus	G-VQVT-
	PQKPGPQPPMHPGQLPLQEGELIAPDEPQVAPSENPTPEVPIMDFADPQFPT
Monodelphis	----DA-AQHGVPLPPLNQEQSHMQPEDKGAGQQ-
	PGLPLGNAGRPELPEMDFAGQLGQS
Ornithorhynchus	S-AQGPPAQNGDPQPP ILHLQPPLQOQEEKPSVQE-
	QVAPPKRPPKPEL PALDFTVQLRQS

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Tursiops	-----MFPIA-
	RLISLGPVPQNKPPPLYPGIFYMSYGAN
Sus	-----MFPIA-
	RLISQGPVPQDKPSPLYPGMFYMSYGAN
Bos_taurus	-----MFPIA-
	HLISRGMPQNKPSQLYPGIFYVITYGAN
Ursus	-----VFQIA-

RLISQGPMPQNKPSPLYPGIFYMSYGAN
 Equus -----MFPIA-
 RLIARGPMPPNKQAPLYPGLFYLYTYGAN
 Homo LPGMDFPDPQGPSLPLGLDFADPQGSTIFQIA-
 RLISHGPMPQNKQSPLYPGMLYVPPFGAN
 Cavia -----VFQIA-
 RFVSRVPVPQNKPAMLYPGMVYMSYGTN
 Rattus -----VFQIA-
 HSLSRGPMAHNKVPTFYPGMFYMSYGAN
 Mus -----VFQIA-
 RSISRGPMAHNKASAFYPGMFYMSYGAN
 Monodelphis -----MFPMG-
 RLISQGPPEQKAEKAPLDPGMFYMPYGAN
 Ornithorhynchus -----
 IFPIAQKLISQGPRQKAEQSPLYPELVYVPPFGAN

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Tursiops QLN-
 APARLGIMSSEEMAGGGGPMAYGAMFPGFGGMRPGLGGMPPNPAMGGDFTLEFDS
 Sus QLN-
 SPARLGILSSEEMAGGRGGPLAYGAMFPGFGGMRPNLGGMPPNSAKGGDFTLEFDS
 Bos_taurus QL-----
 GGRGDPLAYGAIFFPGFGGMRPRLGGMPHNPDMGGDFTLEFDS
 Ursus QLN-
 APGRLGIMSSEEMAGGRGGPMAYGAMFPGFGGMRPNLGGMPHNPAMGGDFTLEFDS
 Equus QLN-
 TPGRLGIMSSEEMAGGRGGPMAYGAMFPGFGGMRSSLRGMPPNPAMGGDFTLEFDS
 Homo QLN-
 APARLGIMSSEEVAGGREDPMAYGAMFPGFGGMRPGFEGMPHNPAMGGDFTLEFDS
 Cavia QL-----
 GGRVAPVTYGLLPLGLTGVRHTIRRVQDPTMAGDFTLEFDT
 Rattus QLN-
 APARIGFMSSEEMPGERGSPMAYGTLFPGYGGFRQTLRGLNQNSPKGGDFTVEVDS
 Mus QLN-
 APARIGFMSSEEMPGERGSPMAYGTLFPRFGGFRQTLRRLNQNSPKGGDFTVEVDS
 Monodelphis RLN-APARFGLLSSEEMMGGRGTPMGYAMFP---
 GMKSGFGGMPPNPAMGGDFTLEHDQ
 Ornithorhynchus
 QQNAAPARLGKVSSEEMPGGGGEPLAYGSIFPGFGSMRPGFGAMQINPALGKDFTELEDDS

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Tursiops PAAGTKGPEKGEQGAQDPPVPEANPADLENPALLSELAPGALGG-
 LLANPKGNIPNLARG
 Sus PAAGTKGPEKGEQGAEGSPVAEANTADPESPALFSEVASGVLGG-
 LLANPKGKIPNLARG

Bos_taurus PVAATKGPEKGEQDQSPVPEAHLADPESPALLSELAPGALEG-
 LLANPEGNIPNLARG
 Ursus PVAGTKGPEKGEQDQSPMPDGD PANLENPDLLPGVAPGALGG-
 LLAHPKDDEPGLARG
 Equus PVAATKGPEKGEQDQSPAKEADEANPENQALLSEIASGPLGG-
 LLALPKGSVPNLARG
 Homo PVAATKGPENEEGGAQDQSPMPEANPDNLENPAFLTELEPAPHAG-
 LLALPKDDIPGLPRS
 Cavia P-AATKGPEKGEQDQSP LHETKGEDPEN AALLS QIAPGAHTG-
 LFGFPNDNVPSMARG
 Rattus PVSVTKGPEKGE-GPEGSPLQEAS PDKGENPALLS QMAPGAHAG-
 LLAFPNDHIPNMARG
 Mus PVSVTKGPEKGE-GPEGSPLQEANPGKREN PALLS QMAPGAHAG-
 LLAFPNDHIPSMARG
 Monodelphis PTGGNKSPGVAEGGAQDQSPGPKGNPGNLEKPAFLPEEIPWAQGG-
 ILSFPKGRISLGGG
 Ornithorhynchus PTVAGKPPGQ-
 GEVLGSPRDGAIPAGHPNPGLLPERISRLRSGAALTFPSDFIPHRGQ
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Tursiops PAGQSRGPLR-
 VTPAAADPLMTPGLADVYETYSADETTTLGLQEETTVDSTVTPDSQHTS
 Sus PAGRSRGPPG-
 VTPADADPLMTPGLADAYETYGADETTTLGLQEEMTMDSTATPYSEHTS
 Bos_taurus PAGRSRGFLRGVTPAAADPLMTPGLAEVYETYGADETTTLGLQEETTVDSTATPDTQHTL
 Ursus PAGQSGGPPR-VTPADADPLMTPGLADLYETYGADVTTPL---
 EETPTDTTAVPDTQQTL
 Equus PAGQSRGPPR-
 VTPAAADPLMTPGLAEAYETYGADVTTPLDFEETTTDTTVPESPQTS
 Homo PSGKMKGLPS-
 VTPAAADPLMTPPELADVRYTYDADMTTSVDFQEEATMDTMAPNSLQTS
 Cavia PSGHRNRPLE-VTPVTADPLITPELAEIYETYGGDVTTPLG---
 EATMETTMTPTDTPQTP
 Rattus PAGQR--LLG-VTPAAADPLITPELAEVYETYGADVTTPLG-
 DGEATMDITMSPDTQQPP
 Mus PAGQR--LLG-VTPAAADPLITPELAEVYETYGADVTTPLG-
 DGEATMDITMSPDTQQPL
 Monodelphis PAGQVKGFLR-
 GTSPTPESGITPGPSDITETFGTDITTPGLMLEEGPLDITIEPDTHHTS
 Ornithorhynchus PAGQSKLPPG-
 VTPPPADPLMTPGSPDPLEFFEGDGTTPGLGLQREALDITMTPDTQSTY
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Tur siops MPGNKAQQPQIKHDAWHFQEP

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Sus          MPGPKAQQPQIKRDAWRFQEP
Bos_taurus  MPRNKAQQPQIKHDAWHFQEP
Ursus       MPESKAQQPQIMHDVWHFQEP
Equus       MPGNEAEQPQMVHDAWRFQEP
Homo        MPGPKAQEPPEMMHDAWHFQEP
Cavia       MPGPKVVRQPQMVHEPWHFQEP
Rattus      MPGPKVHQPV-HNAWRFQEP
Mus         LPGPKVHQPV-HNAWRFQEP
Monodelphis VQGNESQQPQIMQDVWHFQEP
Ornithorhynchus MPGNEAQQMQVTQDQWQFQEP
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Mammal-AMBN-CDS-ALn.txt

PAL2NAL output

CLUSTAL W multiple sequence alignment

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Tursiops
ATG-----
Sus
ATG-----
Bos_taurus
ATG-----
Ursus
ATG-----
Equus
ATG-----
Homo
ATG-----
Cavia
ATG-----
Rattus
ATG-----
Mus
ATG-----
Monodelphis
ATG-----GCCAGGGAACAG
Ornithorhynchus
ATGATCCCTCTAATAGTCGCACAGGTCGGGGCCCAGGGAGCCATCCTAAGCTCAGAGGAA

Tursiops
-----
Sus
-----
Bos_taurus
-----

```

Ursus

Equus

Homo

Cavia

Rattus

Mus

Monodelphis

AACGTA-----

Ornithorhynchus

CTGATCTTCACTGGGCTATTCATCCAGCCTCTAGCCCCTGGAAGAATGGCCCCTATAGGT

Tursiops

Sus

Bos_taurus

Ursus

Equus

Homo

Cavia

Rattus

Mus

Monodelphis

GAAAAAAGAAGAGAAGACTCAGTACAGAGTCTT-----GGAGTACTCCCT

Ornithorhynchus

CAGGACAATCCAGAAGATCAGGACCAGGTTCTACCAACAGGACAAAGTGGCATGAGCCCT

Tursiops

Sus

Bos_taurus

Ursus

Equus

Homo

Cavia

Rattus

Mus

Monodelphis -----

CCATTGACGAGGTCT-----

Ornithorhynchus

GCCACCCAGGACCCCCAGAAGACCAGCCCCCGACTGCCAGTGGCTTGCTGGATGAGTCT

Tursiops

Sus

Bos_taurus

Ursus

Equus

Homo

Cavia

Rattus

Mus

Monodelphis -----

CTTGACTGGTATCTCCAGGCTCTGGGA-----ACAAGGCTCAAG

Ornithorhynchus

GAGGTCACATTACCTGCCAACCTACAAGGGGTCTCGCTGACGACTGAGGAGAGCACCACC

Tursiops

CCAGCATTGAAGATCCCACCTTTTCAAATGAAGGACATGATACTGATCCTGTGCCTCCTG

Sus

CCAGCATTGAAGATTCCACCTTTTCAAATGAAGGACATGGTACTGATCCTGTGCCTCCTG

Bos_taurus

CCAGCATTGAAGATCCCACCTTTTCAAATGAAGGACATGATACTGATCCTGTGCCTCCTG

Ursus

TCAGCATTGAAGATCCCACCTTTTCAAATGAAGGACCTAATACTGATCTTATGCCTCCTG

Equus
CCAGCATTGAAGATCCCGCTTTTCAAATGAAGGACTTGGTACTGATCCTGTGCCTCCTG
Homo
TCAGCATCTAAGATTCCACTTTTCAAATGAAGGACCTGATACTGATCCTATGCCTCCTG
Cavia
TCACCGTCTAAGATTCCACTCTTCAAATGAAGGACCTGATGCTGTTCCCTGTCCCTCCTG
Rattus
TCAGCATCTAAGATTCCACTTTTCAAATGAAGGGCCTGCTCCTGTTCCCTGTCCCTAGTG
Mus
TCAGCATCTAAGATTCCACTTTTCAAATGAAGGGCCTGATCCTGTTCCCTGTCCCTAGTG
Monodelphis
CCAGTGGTGAAGAAATCACTTTTTAAAATGAAGGACTTGCTACTGATGCTGTGCCTTTTG
Ornithorhynchus
GAGGAACCAAGGGTCTACTCTTAAAATGGAGAATTTGGTTCTAATCCTGTCCCTCTTT

Tursiops AAAATGAGTTCTGCAGTGCCG-----
GTGTTTCCTCAGCAACCTGGGACA-----
Sus AAAATGAGTTCTGCAGTGCCG-----
GCATTTCCCTCGGCAACCTGGAACC-----
Bos_taurus AAAATGAGTTCTGCAGTGCCG-----
GCGTTTCCTCAGCAACCTGGGATA-----
Ursus GGAATGAGTTCTGCAGTGCCA-----
GTGTTTCCTCGGCAACCTGGGACT-----
Equus GAAATGGGTTCTGCGGTGCCG-----
GCGTTTCCTCGGCAGCCTGGGATA-----
Homo GAAATGAGTTTTGCAGTGCCG-----
TTCTTTCCCTCAGCAATCTGGAACA-----
Cavia AAAATAAGCTTTGCAGTGCCG-----
GCATTTCCCTCAGCAACCAGGAGACCAAAC
Rattus AAAATGAGCCTCGCCGTGCCG-----
GCATTTCCCTCAACAACCTGGGGCTCAAGGC
Mus AAAATGAGCCTCGCCGTGCCG-----
GCATTTCCCTCAACAACCTGGGGCTCAAGGC
Monodelphis
GGAACAAGTTTTGCAGTGCCAATAAAACAGGTATATCCTCAACAAGCTGCAGCA-----
Ornithorhynchus GGCACAAGTTTTGCCATACCG-----
GTCTTTCTGCAGCCGGGTGGACCT-----

Tursiops -----
CCAGGCATGGCTAGTTTGAGCCTTGAGACAATGAGACAGTTGGGAAGTTTG
Sus -----
CCAGGTGTGGCTAGTTTGAGCCTTGAGACAATGAGACAGTTGGGAAGTTTG
Bos_taurus -----
CCAGGCATGGCTAGTTTGAGCCTTGAGACAATGAGACAGTTGGGAAGCCTG
Ursus -----
CCGGGCATGGCTAGTTTGAGCCTGGAGACAATGAGACAGCTGGGAAGTTTG
Equus -----

CCAGGCATGGCTAGTTTGAGCCTTGAGACAATGAGACAGTTGGGAAGTTTG
Homo -----
CCGGGTATGGCTAGTTTGAGCCTTGAGACAATGAGACAGTTGGGAAGTCTG
Cavia
ATGGCACCACCCGGCATGGCTAGTTTGAGTCTAGAGACAATGAGACAATTGGGAAGTCTT
Rattus
ATGGCACCTCCTGGCATGGCTAGTTTGAGCCTTGAGACAATGAGACAGTTGGGAAGCTTG
Mus
ATGGCACCTCCTGGCATGGCTAGTTTGAGCCTTGAGACAATGAGACAGTTGGGAAGCTTG
Monodelphis -----
ACTGGACTGGGGAGCTTAAGTCTTGAGACCATGAGACAGTTGGGGAATCTG
Ornithorhynchus -----
CCTGGCATGGGCAGTCTGAGCCTGGAGACAATGAGACACCTGGGCAAT---

Tursiops
CAGGGGTTAAACATGCTTTCTCAGTATTCAAGATTTGGCTTTGGGAAATCATTTAATTCT
Sus
CAGGGACTAAACATGCTTTCTCAGTATTCAAGATTTGGCTTTGGGAAATCATTTAATTCT
Bos_taurus
CAGGGATTAAACCTGCTTTCTCAGTATTCAAGATTTGGCTTTGGGAAATCATTTAATTCT
Ursus
CAGGGATTAAACATGCTTTCTCAGTATTCAAGATTTGGTTTTGGAAAATCATTTAATTCT
Equus
CAGGGATTAAACATGCTCTCTCAGTATTCAAGATTCGGCTATGGGAAATCATTTAATTCT
Homo
CAGAGATTAAACACACTTTCTCAGTATTCTAGATACGGCTTTGGAAAATCATTTAATTCT
Cavia
CAAGGATTAAACGCACCTTTCTCAGTATTCTAGGTTTGGTTTTGGAAAATCACTCAATTCT
Rattus
CAGGGGCTCAACGCACCTTTCTCAGTATTCTAGACTTGGCTTTGGAAAAGCACTTAATAGT
Mus
CAGGGACTCAACGCACCTTTCTCAGTATTCTAGACTTGGCTTTGGAAAAGCACTTAATAGT
Monodelphis
AATGGATTGAATCTACTTTCTCAGTTCTCTAGGTTTGGTTATGGCAAACCGTTTACCTCT
Ornithorhynchus -----
TTGAACTTGCTTCCACAGTTCTCTAGATTTGGTTTTGGAAAGCAGTTTAATTCT

Tursiops
TTGTGGATGCATGGTCTCCTCCCACCACATTCTCTTTCCCGTGGATGAGACCAAGGGAA
Sus
CTGTGGATGCATGGTCTCCTTCCACCACACTCCTCCTTCCAATGGATGAGACCAAGGGAA
Bos_taurus
TTGTGGATGAATGGTCTTCTCCCACCACATTCTCCTTCCCATGGATGAGACCAAGGGAA
Ursus
TTGTGGTTGCATGGTCTCCTCCCACCACATTCTTCTTTCCCATGGATGAGACCAAGGGAA
Equus
TTGTGGATGAATGGTCTCCTGCCGCCACCTTCTCTTTCCCATGGATGAGACCAAGAGAA

Homo

TTGTGGATGCACGGTCTCCTCCCACCACATTCCTCTCTTCCATGGATGAGGCCAAGAGAA

Cavia

TTGTGGCTGCAAGGTCTCCTCCCACCACCTTCGTCTTTCCCGTGGCTGAGACCCAGAGAA

Rattus

TTATGGTTGCATGGACTCCTCCCACCGCATAATTCTTTCCCATGGATAGGACCAAGGGAA

Mus

TTATGGTTGCACGGACTTCTCCCACCGCATAACTCTTTCCCATGGATAGGACCAAGGGAA

Monodelphis

TTGTGGATGCATGGACTCCTTCCACCTCATTCTCCTTCCCATGGATGCAGCAGAGGGAA

Ornithorhynchus

TTATGGATGCATGGATTCTCCTCCCCCACACTCCAACACTACCCATGGCTGTCACCAAGAGAC

Tursiops

CATGAAACTCAACAGTATGAATATTCTTTGCCTGTGCATCCCCCACCTCTCCCATCGCAG

Sus

CATGAAACTCAACAGTATGAATATTCTTTGCCTGTGCACCCCCCACCTCTCCCATCGCAG

Bos_taurus

CATGAAACTCAA-----CAG

Ursus

CATGAAACTCAACAGTATGAATACTCTTTGCCTGTGCACCCCCCACCTCTCCCATCGCAG

Equus

CATGAAACTCAACAGTATGAATATTCTTTGCCTGTGCATCCCCCACCTCTCCCATCGCAG

Homo

CATGAAACTCAACAGTATGAATATTCTTTGCCTGTGCATCCCCCACCTCTCCCATCACAG

Cavia

CACGAGACTCAGCAATACGAGTACTCGGTGCCGGTGCACCCTCCACCTCTCCCATCCCAG

Rattus

CATGAAACCCAACAGTATGAATATTCTTTGCCTGTGCATCCCCCACCTCTCCCATCACAG

Mus

CATGAAACCCAGCAGTATGAATATTCTTTGCCTGTGCATCCCCCACCTCTCCCATCACAG

Monodelphis

CATGAAACCCAACAGTATGAATATGCTTTGCCAGTCCACCCACCTCCTTTACCATCCCAG

Ornithorhynchus

CAGGAGACACAACAGTACGAATACGCGTTGCCGGTGCATCCGCTCCCCGGCCGTCCCAG

Tursiops

CCATCCCTGCAGCCTCCACAGCCAGGACAGAAACCTTTCCTCCAGCCCACCGTTGTAACC

Sus

CCATCCTTGCAGCCTCAACAGCCGGGACAGAAGCCTTTCCTCCAGCCCACCGTTGTAACC

Bos_taurus

CCATCCCTGCAGCCTCAACAGCCAGGACAGAAACCTTTCCTCCAGCCCACCGTTGTCACC

Ursus

CCGTCCCTGCAGCCGCAACAGCCAGGACAGAAACCTTTCCTCCAGTCCGCTATTGTAACC

Equus

CCATCCCTGCAGCCTCAACAGCCAGGACAGAAAGCTTTCCTCCAGCCCACCATGTAACC

Homo

CCATCCTTGAAGCCTCAACAGCCAGGACTGAAACCTTTTCTCCAGTCTGCTGCTGCAACC
Cavia
CCATCCCAGCAGCCTCCACAGCCAGGAATGAAACATTTCCAACAGCCCCTGCTACCCCT
Rattus
CCATCCTTGCAGCCTCACCAGCCAGGACTGAAACCTTCCTCCAGCCCCTGCTGCAACC
Mus
CCATCCTTGCAGCCTCACCAGCCAGGACTGAAACCTTCCTCCAGCCCCTGCTGCAACC
Monodelphis
CAGACACTGCAGCCCCAAAAGTCAGGCCAGAAGTCTTTCCTCCAGTCCAGTCCAGCACCA
Ornithorhynchus
CGGACCCTCCAGCCCCAGCAGCCGAAGCAGAATGCGTTCCTCCCTCCCACCGTGGCACCT

Tursiops TCT---GTCCAGAACACA---
GTCCAGAAGGGAATACCTCAGCCTCCGATTTACCCGGGA
Sus TCC---ATCCAGAACCCA---
GTCCAGAAGGGAGTACCTCAGCCTCCAATTTACCAGGGA
Bos_taurus TCC---ATGCAGAACGCA---
GTCCAGAAGGGCGTACCTCAGCCTCCGATTTACCAGGGA
Ursus GAC---ATCCGGGACACA---
GCCCCGAAGGGAGGACCTCAGCGTCCAGTTTACCAGGGA
Equus TCAGGGATCCAGGACACC---
ATCCAGAAGGGAGGACATCAGCCTCCGGTTTACCAGAGA
Homo ACC---AACCAGGCCACA---
GCACTGAAAGAAGCACTTCAGCCTCCAATTCACCTGGGA
Cavia GCT---ATCCAGGACACA---
CCCCAAAAGGCAGGACCTCAGCCTCCGATGCACCCAGA
Rattus GGT---GTCCAGGTCACA---
CCCCAGAAGCCAGGGCCTCATCCTCCAATGCACCCTGGA
Mus GGT---GTCCAGGTCACA---
CCCCAGAAGCCAGGGCCTCAGCCTCCAATGCACCCTGGA
Monodelphis -----GATGCC---
GCCCAGCATGGGGTACCTCTGCCTCCCCTGAATCAGGAA
Ornithorhynchus TCC---
GCCCAGGGCCCGCCTGCCAGAACGGGGATCCTCAACCTCCGATCCTCCACCTG

Tursiops CATCCACCCTTGCAGCAATCAGAGGGGCCAATGATT---CAA---
CAGGTGGCACCATCA
Sus CATCCGCCCTTGCAGCAAGTAGAGGGGCCAATGGTTCAGCAG---
CAGGTGGCACCATCA
Bos_taurus CATCCGCCCTTGCAGCAAGCAGAGGGGCCGATGGTTGAACAG---
CAGGTGGCGCCATCA
Ursus CAACCGCCCTTGCAGCAGAAAGAGGGGCCGATGCTTGAACAG---
CAAGTGGCACCATCA
Equus CAGCCGCCCTTGCAGCAGTCAGAGGGGCCAATGGTTCAACAG---
CAGGTGGCACCATCA
Homo CATCTGCCCTTGCAGGAAGGAGAACTGCCTCTGGTTCAGCAG---
CAGGTGGCACCATCA

Cavia CAGCTGCCCTTGAAGGATGCGGAACTGCCAGAGGCTCACGAG---
CAAGTGGCCCCAACA
Rattus
CAGCTGCCCTTGCAGGAAGGAGAGCTGATAGCACCAGATGAGCCACAGGTGGCGCCATCA
Mus
CAGCTGCCCTTGCAGGAAGGAGAGCTGATAGCACCAGATGAGCCGCAGGTGGCACCATCC
Monodelphis CAAAGCCATATGCAGCCAGAAGACAAAGGAGCAGGCCAGCAG---
CCGGGGCTGCCCTTG
Ornithorhynchus CAGCCTCCCCTGCAGCAGGAGGAGAAACCTCCGTTCAAGAG---
CAGGTGGCCCCACCC

Tursiops
GAAAAGCCATCAAAGACCGAGTTGCCAGGAATGAATTTTGCTGATCCACAAGATCCATCG
Sus
GAAAAGCCACCAGAGGCCGAGCTACCAGGACTGGATTTTGCTGATCCACAAGATCCATCG
Bos_taurus
GAAAAGCCACCAACGACCGAGCTACCAGGAATGGATTTTGCTGATCTACAAGACCCACCG
Ursus
GATAAGCCACCAAAGGCCGAGCTACCGGGAATGGATTTTGCTGATCCAGAAGGTCCATCA
Equus
GATAAGCCACCAAAGGCCGAGCTAAGAGAAATGGATTTTCCTGGTCCACAGGATCCACAA
Homo
GATAAGCCACCAAAGCCTGAGCTCCCAGGAGTAGATTTTGCTGATCCACAAGGTCCATCA
Cavia
GAGATGCCACTGAACCCTGAGCTCCCTGTAAGTGGATTTTGCTGATCCACAATTCATCA
Rattus
GAGAACCCACCAACACCCGAGGTACCAATAATGGATTTTGCCGATCCACAATTCCTCAACA
Mus
GAAAACCCACCAACACCTGAGGTACCAATAATGGATTTTGCTGATCCACAATTCCTCAACC
Monodelphis
GGCAACGCAGGGAGGCCGAGCTACCAGAAATGGATTTTGCTGATCCACAATTCCTCAACC
Ornithorhynchus
AAAAGACCCCAAAGCCAGAGTTACCCGCACTGGATTTTACGGTTCAACTGAGACAGTCA

Tursiops

Sus

Bos_taurus

Ursus

Equus

Homo
CTCCCAGGAATGGATTTTCCTGATCCACAAGGTCCATCACTCCCAGGATTGGATTTTGCT
Cavia

Rattus

Mus

Monodelphis

Ornithorhynchus

Tursiops -----ATGTTTCCAATAGCC---

CGTTTGATATCTCTGGGACCAATG

Sus -----ATGTTTCCAATAGCC---

CGTTTGATATCTCAGGGACCAATG

Bos_taurus -----ATGTTTCCAATAGCC---

CATTTGATATCTCGGGACCAATG

Ursus -----GTGTTCCAATAGCC---

CGTTTGATATCTCAGGGACCAATG

Equus -----ATGTTCCAATAGCC---

CGTTTGATAGCTCGGGACCAATG

Homo GATCCACAAGGTTCAACAATTTTCCAATAGCC---

CGTTTGATTTCTCACGGACCAATG

Cavia -----GTGTTCCAATAGCC---

CGTTTCGTATCCCGGGTACCAGTA

Rattus -----GTGTTCCAGATCGCC---

CATTCGCTGTCTCGGGACCAATG

Mus -----GTGTTCCAGATCGCC---

CGTTCAATATCTCGGGACCAATG

Monodelphis -----ATGTTTCCAATGGGA---

CGTTTGATCTCTCAAGGACCAATG

Ornithorhynchus -----

ATATTTCCAATTGCCAAAAATTAATATCTCAAGGACCCAGG

Tursiops

CCACAAAATAAACCACCTCCACTTTATCCAGGAATATTTTACATGTCCTATGGAGCAAAT

Sus

CCACAAGATAAGCCATCTCCACTTTATCCAGGAATGTTTTACATGTCCTACGGAGCAAAT

Bos_taurus

CCACAAAATAAACCATCTCAGCTTTACCCAGGAATATTTTACGTGACCTATGGAGCAAAT

Ursus

CCACAAAATAAACCATCACCCTTTATCCGGGAATATTTTACATGTCCTATGGAGCAAAT

Equus

CCACCAAATAAACAAGCTCCACTTTATCCAGGATTATTTTACCTGACCTATGGAGCAAAT

Homo

CCACAAAATAAACAATCTCCACTTTATCCAGGAATGTTGTACGTGCCTTTTGGAGCAAAT

Cavia

CCACAAAATAAACCAGCTATGCTTTATCCTGGAATGGTTTATATGTCCTATGGAACAAAT

Rattus
GCACACAACAAAGTACCCACTTTTTACCCAGGAATGTTTTACATGTCTTATGGAGCAAAC
Mus
GCACACAACAAAGCATCCGCTTTTTACCCAGGAATGTTTTACATGTCTTATGGAGCAAAC
Monodelphis
CAAAAAGCAGAGAAAGCCCCACTTGACCCAGGAATGTTTTACATGCCCTATGGAGCAAAC
Ornithorhynchus
CAAAAGGCTGAACAATCTCCACTTTACCCGGAATTGGTTTACGTGCCATTTGGAGCAAAT

Tursiops CAATTGAAC---
GCTCCTGCCAGACTTGGCATCATGAGCTCAGAAGAAATGGCTGGAGGA
Sus CAATTGAAC---
TCTCCTGCCAGACTTGGCATCCTGAGCTCAGAAGAAATGGCGGGAGGA
Bos_taurus
CAACTG-----GGAGGA
Ursus CAGTTGAAC---
GCTCCTGGCAGACTTGGCATCATGAGTTCGGAAGAAATGGCGGGAGGC
Equus CAATTGAAC---
ACTCCTGGCAGACTTGGCATCATGAGCTCAGAGGAAATGGCAGGAGGC
Homo CAATTGAAT---
GCCCTGCCAGACTTGGCATCATGAGTTCAGAAGAAGTGGCAGGCGGG
Cavia
CAACTG-----GGAGGA
Rattus CAATTGAAT---
GCTCCTGCCAGAATCGGCTTCATGAGTTCAGAAGAAATGCCTGGAGAA
Mus CAATTGAAT---
GCTCCTGCCAGAATTGGCTTCATGAGTTCAGAAGAAATGCCTGGAGAA
Monodelphis CGATTGAAT---
GCCCCAGCAAGATTTGGCTTACTAAGCTCTGAAGAAATGATGGGAGGA
Ornithorhynchus
CAACAGAATGCCGCCCTGCGAGACTTGGCAAAGTGAGCTCTGAAGAAATGCCGGGAGGC

Tursiops
GGAGGAGGCCCATGGCCTATGGAGCCATGTTCCCGGATTTGGAGGCATGAGGCCCGGC
Sus
AGAGGAGGCCCTTGGCCTATGGAGCCATGTTCCAGGATTTGGAGGCATGAGGCCAAC
Bos_taurus
AGAGGAGACCCCTGGCCTATGGAGCCATATTCCAGGATTTGGAGGCATGAGGCCAGG
Ursus
AGAGGAGGCCCATGGCCTATGGAGCCATGTTCCAGGATTTGGAGGCATGAGGCCAAC
Equus
AGAGGAGGCCCATGGCCTATGGAGCCATGTTCCAGGATTTGGAGGCATGAGGTCCAGC
Homo
AGAGAAGACCCAATGGCCTATGGAGCCATGTTCCAGGATTTGGAGGCATGAGGCCCGGC
Cavia
AGAGTGGCCCCTGTGACCTACGGAGGCCTGCTGCCTGGACTGACGGGTGTGAGGCACACC
Rattus

AGAGGAAGTCCCATGGCCTACGGAActCTGTTCCcAGGATATGGAGGCTTCAGGCAAACC
Mus
AGAGGAAGTCCCATGGCCTATGGAActCTGTTCCcAAGATTTGGAGGCTTCAGGCAAACC
Monodelphis AGAGGTACCCCTATGGGTATGGTGCCATGTTTCCA-----
GGAATGAAGTCTGGC
Ornithorhynchus
GGAGGAGAGCCCTTGGCCTATGGATCCATCTTCCCGGGATTTGGGAGCATGAGACCCGGC

Tursiops
CTTGAGGGATGCCCCCAATCCAGCCATGGGCGGGGACTTTACTCTGGAATTTGACTCC
Sus
CTTGAGGGATGCCCCCAACTCAGCCAAGGGTGGGGACTTTACTCTGGAGTTTGACTCC
Bos_taurus
CTTGAGGGATGCCCCACAACCCAGACATGGGTGGGGACTTTACTCTGGAATTTGACTCC
Ursus
CTTGAGGGATGCCCCACAATCCAGCCATGGGCGGGGACTTTACTCTGGAATTTGACTCC
Equus
CTTAGAGGGATGCCCCGAATCCAGCCATGGGCGGGGACTTTACTCTGGAATTTGACTCT
Homo
TTTGAGGGAATGCCCCACAACCCAGCTATGGGCGGTGACTTCACTCTGGAATTTGACTCC
Cavia
ATCCGGAGGGTGCCCCAAGACCCGACCATGGCTGGAGACTTCACTCTGGAATTTGACACC
Rattus
CTTAGGGGACTGAATCAGAATTCACCCAAGGGAGGAGACTTTACTGTGGAAGTAGATTCT
Mus
CTTAGGAGACTGAATCAGAATTCACCCAAGGGAGGAGACTTTACTGTGGAAGTAGATTCC
Monodelphis
TTTGAGGGATGCCCCAAACCCAGCCATGGGAGGAGACTTCACTCTGGAATTTGACTCC
Ornithorhynchus
TTCGGGGCCATGCAGATCAATCCGGCTCTGGGAAAAGACTTCACTCTGGAAGACGACTCG

Tursiops
CCAGCCGCTGGAACCAAAGGCCCGGAGAAGGGAGAAGGAGGTGCACAAGACCCCCCTGTG
Sus
CCAGTCTGCTGGAACCAAAGGCCCGGAGAAGGGAGAAGGAGGTGCAGAAGGCTCTCCAGTG
Bos_taurus
CCAGTCGCTGCAACCAAAGGCCCGGAGAAGGGAGAAGGAGGTGCACAAGACTCCCCCTGTG
Ursus
CCAGTTGCCGGAACCAAAGGCCCTGAGAAGGGAGAAGGAGGTGCACAAGGCTCCCCATG
Equus
CCAGTCGCTGCAACCAAAGGCCCTGAGAAAGGAGAAGGAGGTCCACAAGGCTCCCCCTGCG
Homo
CCAGTGGCTGCCACCAAAGGCCCTGAGAACGAAGAAGGAGGTGCACAAGGCTCCCCATG
Cavia CCG---
GCTGCAACCAAAGGCCCTGAGAAGGGAGAAGGAGGGGCACAAGGCTCCCCCTTT
Rattus CCAGTGTCTGTAActAAAGGCCCTGAGAAAGGAGAG---
GGTCCAGAAGGCTCTCCACTG

Mus CCAGTATCTGTTACCAAAGGCCCTGAAAAAGGAGAA---
GGTCCAGAAGGCTCTCCACTG
Monodelphis
CCAACCTGGAGGCAACAAATCCCCTGGTGTAGCAGAGGGTGGTGCTCAAGACTCCCCTGGG
Ornithorhynchus CCCACGGTTGCCGGCAAGCCCCCTGGTCAGGGA---
GGAGAGGTCTGGGCTCCCCCAGG

Tursiops
CCGGAGGCCAACCCAGCCGATCTGGAAAACCCAGCTCTCCTTTTCAGAGCTAGCACCTGGT
Sus
GCGGAGGCCAACACAGCTGATCCTGAAAGCCCAGCTCTCCTTTTCAGAGGTAGCATCTGGT
Bos_taurus
CCAGAGGCCACCTAGCCGATCCGGAAAGCCCAGCTCTCCTTTTCAGAGCTAGCACCTGGT
Ursus
CCCGATGGCGACCCAGCCAATCTGGAAAACCCAGATCTCCTTCCAGGGGTAGCACCTGGT
Equus
AAGGAGGCTGACGAGGCCAATCCGGAAAACCAGGCTCTCCTTTTCAGAGATTGCATCTGGT
Homo
CCGGAGGCCAACCCAGACAATCTAGAAAACCCAGCTTTCCTTACAGAGCTAGAACCTGCT
Cavia
CACGAAACCAAAGGAGAGGACCCTGAAAACGCAGCTCTTCTTTTCACAGATAGCACCTGGT
Rattus
CAAGAGGCCAGCCCAGACAAGGGCGAAAACCCGGCTCTCCTTTTCACAGATGGCCCCCGGG
Mus
CAAGAGGCCAACCCAGGCAAACGGGAAAACCCCGCTCTCCTTTTCACAAATGGCACCTGGG
Monodelphis
CCTAAAGGCAATCCAGGCAATCTGGAGAAACCAGCTTTCCTTCCAGAAGAAATCCCTTGG
Ornithorhynchus
GACGGAGCCATCCCAGGCTGGTCACCCTAACCCAGGGCTCCTTCTGAAAGAATTTCCAGG

Tursiops GCCCTTGGAGGG---
CTTCTTGCTAATCCTAAAGGCAATATCCCCAACCTAGCAAGAGGC
Sus GTCCTCGGAGGG---
CTTCTTGCTAATCCAAAGGGCAAATTTCCCAACCTGGCAAGAGGC
Bos_taurus GCCCTAGAAGGG---
CTTCTTGCTAATCCTGAGGGCAATATTTCCCAACCTGGCAAGGGGC
Ursus GCCCTGGGAGGG---
CTTCTTGCTCATCCAAAGGACGATGAACCTGGCCTGGCAAGAGGC
Equus CCCCTCGGAGGG---
CTTCTTGCTCTTCCCAAAGGCAGTGTTCCTCAACCTGGCAAGGGGC
Homo CCCACGCAGGG---
CTCCTTGCTCTCCCTAAGGATGACATTTCCCGGCCTGCCAAGGAGC
Cavia GCCCACACAGGG---
CTCTTTGGTTTCCCTAATGACAATGTCCCCAGCATGGCAAGGGGC
Rattus GCCCATGCAGGA---
CTTCTTGCTTTCCCAATGACCACATCCCCAACATGGCAAGGGGT
Mus GCCCATGCAGGA---

CTTCTTGCTTTCCCAATGACCACATCCCCAGTATGGCAAGGGGT
Monodelphis GCTCAGGGAGGG---
ATCCTGTCTTTTCCCAAGGGGAGAATTTCTAGTTTGGGGGGAGGC
Ornithorhynchus
CTCCGCAGCGGGGCCGCTGACATTCCCCAGCGACTTCATCCCCCACCAGGACAGGGC

Tursiops CCTGCAGGGCAGAGCAGGGGACCCCTCAGG---
GTCACCCCAGCAGCTGCAGACCCACTG
Sus CCTGCAGGGCGGAGCAGGGGACCCCCCGGG---
GTGACCCCAGCAGATGCTGACCCACTG
Bos_taurus
CCTGCAGGGCGCAGCAGGGGATTCCTTAGGGGAGTCACCCCAGCAGCTGCCGACCCACTG
Ursus CCTGCGGGCAGAGTGGGGGACCCCCCAGG---
GTCACCCCAGCAGACGCTGACCCACTG
Equus CCTGCCGGCAGAGCAGGGGACCCCCCAGG---
GTCACCCCAGCAGCTGCTGACCCACTA
Homo CCTTCAGGGAAGATGAAGGGACTCCCCAGC---
GTCACCCCAGCAGCTGCTGACCCACTG
Cavia CCTTCAGGGCACAGGAACAGACCCCTTGAG---
GTCACCCCAGTAAGTCTGCTGACCCACTG
Rattus CCTGCAGGGCAAAGA-----CTCCTCGGA---
GTCACCCCTGCAGCTGCAGACCCACTG
Mus CCTGCAGGGCAAAGA-----CTCCTTGGA---
GTGACCCCTGCAGCTGCAGACCCACTG
Monodelphis CCAGCTGGGCAGGTCAAGGGATTCTCAGA---
GGCACTTACCAACCCCTGAATCAGGC
Ornithorhynchus CCGGCCGGCAAAGCAAACCTCCGCCCGGC---
GTCACGCCCGCCCGGCTGACCCCTG

Tursiops
ATGACCCCTGGATTAGCTGATGTTTATGAGACCTACAGTGCTGATGAGACCACAACTCTG
Sus
ATGACCCCCGGATTAGCTGATGCTTATGAGACCTACGGTGCTGATGAGACCACAACTCTG
Bos_taurus
ATGACCCCTGGATTAGCTGAGGTTTATGAGACCTACGGTGCTGATGAGACCACAACTCTG
Ursus
ATGACCCCTGGATTAGCTGATCTTTATGAGACCTATGGTGCTGATGTGACCACACCCCTG
Equus
ATGACACCTGGACTAGCTGAGGCTTACGAGACCTACGGTGCTGATGTGACCACACCGCTG
Homo
ATGACCCCTGAATTAGCTGATGTTTATAGGACCTACGATGCTGACATGACCACATCCGTG
Cavia
ATAACCCCTGAGTTAGCTGAGATTTATGAGACCTATGGTGGCGATGTCACCACACCCCTA
Rattus
ATCACCCCTGAATTAGCAGAAGTTTATGAAACCTATGGTGCTGATGTTACCACACCCTTG
Mus
ATCACCCCTGAATTAGCAGAAGTTTATGAAACCTATGGTGCTGATGTTACCACACCCCTG

Monodelphis

ATTACTCCAGGACCATCCGATATTACAGAAACCTTTGGCACTGATATAACTACACCCCTG

Ornithorhynchus

ATGACACCCGGTCCCTCCGACCCTCTGGAGTTCTTCGAAGGTGACGGGACAACCCCCCTG

Tursiops

GGTCTCCAGGAAGAAACCACCGTGGATTCCACAGTGACCCCTGACAGTCAGCACACATCG

Sus

GGTCTCCAGGAAGAAATGACCATGGATTCCACAGCGACCCCATACAGTGAGCATAACATCA

Bos_taurus

GGTCTCCAGGAAGAAACGACTGTGGACTCCACAGCGACCCCTGACACTCAGCACACATTG

Ursus

GAAGAAACGCCACAGATACCACAGCGGTCCCAGACACTCAGCAAACATTG

Equus

GATTTTCGAGGAAGAAACGACCACAGATACCACAGTGACCCAGAGAGTCTCAGACATCG

Homo

GATTTCCAGGAAGAAGCAACCATGGATACCACGATGGCCCCAAACTCTCTGCAAACATCC

Cavia

GGA-----

GAAGCTACCATGGAAACCACAATGACCCAGACACTCCGCAAACCTCCG

Rattus

GGG---

GATGGAGAAGCAACCATGGATATCACCATGTCCCCAGACACTCAGCAGCCACCG

Mus

GGT---

GATGGAGAAGCAACCATGGATATCACCATGTCCCCAGACACTCAGCAGCCACTG

Monodelphis

GGCATGCTAGAGGAAGGGCCTTTGGATATTACTATAGAACCAGATACCCACCACACATCA

Ornithorhynchus

GGCCTTCAGAGGGAAGCTCTTCTGGATACCACCATGACTCCAGACACCCAATCCACCTAC

Tursiops

ATGCCAGGAAACAAGGCCAGCAGCCCCAGATTAAGCATGATGCATGGCATTTC CAAGAG

Sus

ATGCCAGGCAACAAAGCCCAGCAGCCCCAGATTAAGCGTGATGCGTGGCGTTTCCAAGAG

Bos_taurus

ATGCCAAGAAACAAGGCCAGCAGCCCCAAATCAAGCATGATGCATGGCATTTC CAAGAG

Ursus

ATGCCAGAAAGCAAGGCTCAGCAGCCCCAGATCATGCACGATGTGTGGCATTTC CAAGAG

Equus

ATGCCAGGAAACGAGGCAGAGCAGCCCCAGATGGTGCATGATGCGTGGCGTTTCCAAGAG

Homo

ATGCCAGGAAACAAAGCCCAGGAGCCCGAGATGATGCATGACGCATGGCATTTC CAAGAG

Cavia

ATGCCAGGAAACAAAGTCCGCCAGCCCCAGATGGTGCACGAGCCATGGCATTTC CAAGAG

Rattus

ATGCCTGGAAACAAGTGCACCAGCCCCAGGTG---

CACAATGCATGGCGTTTCCAAGAG

Mus

CTACCTGGAAACAAGTGCACCAGCCCCAGGTG---

CACAACGCATGGCGTTTCCAAGAG

Monodelphis

GTACAAGGGAATGAGTCCCAGCAGCCACAGATTATGCAAGATGTATGGCATTTC AAGAA
 Ornithorhynchus
 ATGCCGGGGAACGAGGCCAGCAGATGCAGGTTACACAAGACCAGTGGCAATTCCAGGAG

Tursiops	CCC
Sus	CCC
Bos_taurus	CCC
Ursus	CCC
Equus	CCC
Homo	CCC
Cavia	CCC
Rattus	CCC
Mus	CCC
Monodelphis	CCC
Ornithorhynchus	CCC

Mammal-AMEL-AAaln.txt

CLUSTAL format alignment by MAFFT (v7.351b)

```

M.musculus      MGTWILFACLLGAAFAMPLPPHPGSPGYINLSYE-----
VLTPLKWYQSMI
Rattus          MGTWILFACLLGAAFAMPLPPHPGSPGYINLSYE-----
VLTPLKWYQSMI
Sus             MGTWILFACLLGAAF SMPLPPHPGHPGYINFSYE-----
VLTPLKWYQNM I
Bos             MGTWILFACLLGAAF SMPLPPHPGHPGYINFSYE-----
VLTPLKWYQSM I
Human           MGTWILFACLLGAAFAMPLPPHPGHPGYINFSYE-----
VLTPLKWYQS-I
Equus           MGTWILFASLLGAAFAMPLYLILGTLGYINFSYE-----
VLTPLKWYQSLI
Ursus
MGTWILFACLLGAAFAMPLPPHPGHPGYINFSYENAHFQAINIDRTASVLTPLKWYQNM I
Tursiops
MGTWILFACLLGAAF SMPLPPHPGHPGYINFSYENSYFQVVRIDGTASVLTPLKWYQNM I
Ornithorhynchus MGTWILFTCLIGAAFAIPLPPHPAHPGYINFSYE-----
VLTPLQWYQNMK
Cavia
MGTWILFACLLGTAFAMPLPPHPGHPGYINFSYEKSHSNAINIDRTALVLTPLKWYQSM I
Monodelphis     MRTWILLACLLGAAFAIPLPPHPGHPGYINFSYE-----

```

VLTPWKWYQSMM

* ****:.*:*:**:** . ****:***

*****:***.

M.musculus RQPYPYSGYEPMGGWLHHQIIPVLSQQHPPSH-
 TLQPHHHLPVVPAQQPVAPQQPMPVP
 Rattus RQPHPSYGYEPMGGWLHHQIIPVLSQQHPPSH-
 TLQPHHHLPVVPAQQPVAPQQPMPVP
 Sus RHPYTSYGYEPMGGWLHHQIIPVVSQQTPQSH-
 ALQPHHHIPMVPAQQPGIPQQPMMPLP
 Bos RHPYPSYGYEPMGGWLHHQIIPVVSQQTPQNH-
 ALQPHHHIPMVPAQQPVVPQQPMPVP
 Human RPPYPSYGYEPMGGWLHHQIIPVLSQQHPPSH-
 TLQPHHHIPVPAQQPVIPQQPMPVP
 Equus RQPYTSYGYEPMGGWLHHQIIPVLSQQNPSNH-
 ALQPHHHIPMVSAQHPVVPQQPMMPLP
 Ursus RHPYPSYGYEPMGGWLHHQIIPVLSQQNPPNH-
 ALQPHHHIPMVPAQQPVVPQQPMMPLP
 Tursiops RHPYPSYGYEPMGGWLRHQIIPVVSQQ----A-
 ALQPHHHFPMVPAQQPVGPQQTMMPIP
 Ornithorhynchus RQQYPSYGYEPMGGWLHHQIIPVLSQQQTPTH-
 ALQPHHHIPVMAAQQPMQPPQQPMPMP
 Cavia
 RQPYPYSGYESMGGWVHHQVIPVLSQQHPPSHTTLPPHHHIVGPAQQPVVPQQPLMPVP
 Monodelphis RQQYPSYGYEPMGGWLHHQIIPVLSQQHSPSH-
 SLPPQHHPVMAAQQPAPPQQPMPVP

* :.*****.*****:**:**:**:** :*

*:**:*: .**:* ***.:**:*

M.musculus GHHSMTPTQHHQPNIPPSAQQPFQPFQ----PQAI-
 PPQSH-----
 Rattus GHHSMTPTQHHQPNIPPSAQQPFQPFQ----PQAI-
 PPQSH-----
 Sus GQHSMTPTQHHQPNLPL----PAQQPFQ----PQPV-
 QPQPH-----
 Bos GQHSMTPTQHHQPNLPL----PAQQPFQ----PQSI-QPQPH-----
 QPLQPHQPLQPM
 Human GQHSMTPIQHHQPNLPP----PAQQPYQ----PQPV-
 QPQPH-----
 Equus GQHSMTPTQHHQPNLPP----PVQQPFH----PQPV-
 QPQPH-----
 Ursus GQHSMTPTQHHQPNLPL----PAQQPFQ----PQPV-
 QPQPH-----
 Tursiops GQHSMTPSQPHQPHLPV----PAQQPVQ----
 PQP-----
 Ornithorhynchus GQPSVTPTQHHQSNLPQ----PAQQPFQ----PQVP-
 QQPPH-----

Cavia GHHSMTPNQHHQPNLPP----TSQQPFQQPFPTQPV-
 QPQHH-----QPIQPI
 Monodelphis GQHMAPTQHHQPNLPQ----PGQQPYQ----
 PQPAQQPQPHQPIQPIQPIQPIQPIQPM
 *: .:. * * *. ::* . *** : .*

M.musculus -----
 QPMQPQSPLHPMQPLAPQPPLPPLFSMQPLSPILPELPLEAWPATDKTKRE
 Rattus -----
 QPMQPQSPLHPMQPLAPQPPLPPLFSMQPLSPILPELPLEAWPATDKTKRE
 Sus -----QPLQPQSPMHPIQPLLQPPLPPMFSMQSL---
 LPDLPLEAWPATDKTKRE
 Bos
 QPMQPLQPLQPLQPPVHPIQPLPPQPPLPPIFPMQPLPPMLPDLPLEAWPATDKTKRE
 Human -----
 QPMQPQPPVHPMQPLPPQPPLPPMFPMQPLPPMLPDLTLEAWPSTDKTKRE
 Equus -----
 QPIQPQPPLHPIQPLPPQPPLPPIFPLQPLPPMLPDLPLEAWPATDKTKRE
 Ursus -----
 HPIQPLPPQPPLPPMFPPIQPLPPMLPDLPLEAWPATDKTKRE
 Tursiops -----HP--
 PLLQPPLPPMFPMQPLPPMLPDLPLEAWPATDKTKRE
 Ornithorhynchus -----QPIQPQAPAHMPPM-
 QPPPLPPMFPMQPLPPLLPLDPLEQWPATDKTKRE
 Cavia
 QPIQPIQPIQPIQPSPLHPIQPLPPQQALPPMFSMQPIAPLLPDLPLEAWPATDKTKRE
 Monodelphis QPMQPMQPMQPMQPTPVHAVLPLPPQPPLPPMFPMQPMSMPLPD--
 MEAWPATDKTKRE

*. * : ** .***:*.:*.:

** : ;* ** :*****

M.musculus EVAFSPMK--WYQGMTRHPLNMESTTEK
 Rattus EVAFSPMK--WYQGTARHPLNMETTTEK
 Sus EVD-----
 Bos EVD-----
 Human EVD-----
 Equus EVD-----
 Ursus EVVSIP-----
 Tursiops EVVSTP-----
 Ornithorhynchus EVS GPF SRSW-----
 Cavia EVD-----
 Monodelphis EVD-----
 **

CLUSTAL W multiple sequence alignment

M.musculus

ATGGGGACCTGGATTTTGTTCCTGCCTCCTGGGAGCAGCTTTTGCTATGCCCTACCA

Rattus

ATGGGGACCTGGATCTTGTTCCTGCCTCCTGGGAGCAGCTTTTGCTATGCCCTACCA

Sus

ATGGGGACCTGGATTTTGTTCCTGCCTCCTGGGAGCAGCCTTCTCTATGCCTCTACCA

Bos

ATGGGGACCTGGATTTTGTTCCTGCCTCCTGGGAGCAGCCTTCTCTATGCCTCTACCA

Human

ATGGGGACCTGGATTTTATTCCTGCCTCCTGGGAGCAGCTTTTGCCATGCCTCTACCA

Equus

ATGGGGACCTGGATTTTGTTCCTGCCTCCTGGGAGCAGCCTTTGCTATGCCCTATAT

Ursus

ATGGGGACCTGGATTTTGTTCCTGCCTCCTGGGAGCAGCCTTTGCTATGCCCTACCA

Tursiops

ATGGGGACCTGGATTTTGTTCCTGCCTCCTGGGAGCAGCCTTCTCTATGCCCTACCA

Ornithorhynchus

ATGGGGACTTGGATTCTGTTCCTGCCTAATAGGAGCAGCATTGCTATACTACTTCT

Cavia

ATGGGAACCTGGATTTTGTTCCTGCCTCCTGGGAACAGCCTTTGCTATGCCTCTACCA

Monodelphis

ATGAGGACTTGGATCCTTCTGCCTGTCTCTTGGGTGCAGCATTGCTATTCCTCTGCCA

M.musculus

CCTCATCCTGGAAGCCCTGGTTATATCAACTTAAGCTATGAG-----

Rattus

CCTCATCCTGGGAGCCCTGGTTATATCAACTTAAGCTATGAG-----

Sus

CCTCATCCTGGGCACCCTGGTTATATCAACTTCAGCTATGAG-----

Bos

CCTCATCCTGGGCACCCTGGTTATATCAACTTCAGCTATGAG-----

Human

CCTCATCCTGGGCACCCTGGTTATATCAACTTCAGCTATGAG-----

Equus

CTCATCCTGGGCACCCTGGTTATATCAACTTCAGCTATGAG-----

Ursus

CCTCATCCTGGGCACCCTGGTTATATCAACTTCAGCTATGAGAATGCACACTTTCAGGCT

Tursiops

CCTCATCCTGGGCACCCTGGTTATATCAACTTCAGCTATGAGAATTCATATTTTCAGGTT

Ornithorhynchus

CCTCATCCTGCACATCCCGGTTATATCAACTTCAGCTACGAG-----

Cavia

CCTCATCCTGGGCACCCGGGCTATATCAACTTCAGCTATGAGAAGTCACATTCTAACGCT

Monodelphis

CCTCATCCTGGACATCCTGGTTATATCAACTTCAGCTATGAG-----

M.musculus -----
GTGCTTACCCCTTTGAAGTGGTACCAGAGCATGATA
Rattus -----
GTGCTTACCCCTTGAAGTGGTACCAGAGCATGATA
Sus -----
GTGCTTACCCCTCTGAAGTGGTACCAGAACATGATA
Bos -----
GTGCTCACCCCTCTGAAGTGGTACCAGAGCATGATA
Human -----
GTGCTTACCCCTTTGAAGTGGTACCAGAGC---ATA
Equus -----
GTGCTTACCCCTCTGAAGTGGTACCAGAGCTTGATC
Ursus
ATCAATATTGACAGGACTGCATCAGTGCTTACCCCTTGAAGTGGTACCAGAACATGATA
Tursiops
GTCCGTATTGACGGGACTGCATCAGTGCTTACCCCTCTGAAGTGGTACCAGAACGTAATA
Ornithorhynchus -----
GTGCTTACCCCTTTACAATGGTACCAAAATATGAAG
Cavia
ATCAATATTGACAGGACTGCATTAGTGCTTACTCCTTTGAAGTGGTACCAGAGCATGATA
Monodelphis -----
GTGCTTACCCCTTTGAAATGGTATCAAAGCATGATG

M.musculus
AGGCAGCCGTATCCTTCCTATGGTTACGAACCCATGGGTGGATGGCTGCACCACCAAATC
Rattus
AGGCAGCCGCATCCTTCCTATGGTTACGAACCCATGGGTGGATGGCTGCACCACCAAATC
Sus
AGACATCCGTACACTTCCTATGGGTACGAACCCATGGGTGGATGGCTGCACCACCAAATC
Bos
AGACACCCGTACCCTTCCTATGGTTACGAACCCATGGGTGGATGGCTGCACCACCAAATC
Human
AGGCCACCGTACCCTTCCTATGGTTACGAGCCATGGGTGGATGGCTGCACCACCAAATC
Equus
AGGCAGCCGTACACTTCCTATGGTTACGAACCCATGGGTGGATGGCTGCACCACCAAATC
Ursus
AGGCATCCGTACCCTTCCTATGGTTACGAACCCATGGGTGGATGGCTGCACCACCAAATC
Tursiops
AGACACCCGTACCCGTCCTACGGTTACGAACCCATGGGTGGCTGGCTGCGTCACCAAATC
Ornithorhynchus
CGGCAGCAGTACCCCTCTTATGGTTATGAGCCATGGGCGGATGGCTTCACCACCAGATA
Cavia
AGGCAGCCGTATCCTTCCTATGGTTACGAATCCATGGGTGGATGGGTGCACCACCAAGTC
Monodelphis
CGACAGCAGTATCCCTCCTATGGTTATGAACCCATGGGTGGATGGCTGCATCACCAAATC

M.musculus ATCCCTGTGCTGTCTCAACAGCATCCCCGAGTCAC---
ACCCTTCAGCCTCATCACCAC
Rattus ATCCCTGTGCTGTCTCAACAGCATCCCCGAGTCAC---
ACCCTTCAGCCTCATCACCAC
Sus ATACCCGTGGTGTGCGCAGCAGACTCCCCAGAGTCAT---
GCCCTTCAGCCTCATCACCAC
Bos ATTCCCGTGGTGTCCCAGCAGACTCCCCAGAATCAC---
GCCCTGCAGCCTCATCACCAC
Human ATCCCGTGTGCTGTCCCAACAGCACCCCCGACTCAC---
ACCCTGCAGCCTCATCACCAC
Equus ATCCCGTGTGCTGTCCCAGCAGAATCCCTCAAATCAC---
GCCTTGCAGCCTCATCACCAT
Ursus ATTCCCGTGTGCTGTCCCAGCAGAATCCCCGAATCAC---
GCCCTGCAGCCTCATCACCAC
Tursiops ATTCCCGTGGTATCCCAGCAG-----GCT---
GCCCTGCAGCCTCATCACCAC
Ornithorhynchus ATCCCGTGTGCTGTCCCAGCAACAGACCCCCGACTCAC---
GCGCTGCAGCCCCACCACCAC
Cavia
ATCCCGTGTGCTGTCTCAACAGCATCCCCGAGTCACACCACCCTTCCGCCTCATCACCAC
Monodelphis ATCCAGTGTATCTCAGCAGCATAGCCCAAGTCAT---
TCCTTACCGCCTCAACACCAT

M.musculus
CTTCCCGTGGTGCCAGCTCAACAGCCCCTGGCCCCCAGCAACCAATGATGCCAGTTCCT
Rattus
CTCCAGTGGTGCCAGCTCAACAGCCCCTGGCCCCCAGCAACCAATGATGCCAGTTCCT
Sus
ATCCCATGGTGCCAGCTCAACAGCCCGGATCCCCCAGCAGCCAATGATGCCACTTCCT
Bos
ATCCCATGGTGCCAGCTCAGCAGCCCCTGGTCCCCCAGCAACCAATGATGCCAGTTCCT
Human
ATCCAGTGGTGCCAGCTCAGCAGCCCCTGATCCCCCAGCAACCAATGATGCCCGTTCCT
Equus
ATCCCATGGTGTGCGGCTCAGCACCCTGTGGTCCCCCAGCAACCAATGATGCCACTTCCT
Ursus
ATCCCATGGTGCCAGCTCAGCAGCCCCTGGTCCCCCAGCAACCAATGATGCCACTTCCT
Tursiops
TTCCCATGGTGCCAGCCCAGCAGCCCCTGGGCCCCCAGCAAACCATGATGCCAATTCCT
Ornithorhynchus
ATCCCGTCATGGCCGCCAACAGCCGATGCAGCCCCAGCAGCCAATGATGCCGATGCCA
Cavia
ATCCAGTGGGGCCAGCTCAGCAGCCCCTGGTCCCCCAGCAACCACTGATGCCAGTTCCT
Monodelphis
ATCCCATCATGGCCGCCAGCAGCCAGCGCCACCCCAGCAACCAGTGTGATGCCAGTACCA

M.musculus
GGCCACCACTCCATGACTCCAACCCAACACCATCAGCCAAACATCCCTCCATCCGCCCAG
Rattus
GGCCACCACTCCATGACTCCAACCCAACACCATCAGCCAAACATCCCTCCATCCGCCCAG
Sus
GGCCAACACTCCATGACTCCAACCCAACACCACCAGCCAAACCTCCCTCTG-----
Bos
GGCCAACACTCCATGACTCCAACCCAACACCACCAGCCAAACCTCCCTCTG-----
Human
GGCCAACACTCCATGACTCCAATCCAACACCACCAGCCAAACCTCCCTCCG-----
Equus
GGCCAACACTCCATGGTTCCAACCCAACACCACCAGCCAAACCTCCCTCCA-----
Ursus
GGCCAACACTCCATGACTCCAACCCAACACCACCAGCCAAACCTCCCTCTG-----
Tursiops
GGCCAGCACTCCATGACTCCAAGCCAACCCACCAGCCACACCTCCCTGTG-----
Ornithorhynchus
GGCCAGCCCTCCGTGACCCCGACGCAGCACCATCAGTCAAACCTCCCTCAG-----
Cavia
GGCCACCACTCCATGACTCCAAACCAACACCACCAGCCTAACCTCCCACCA-----
Monodelphis
GGACAGCACCCCATGGCACCAACACAACACCATCAACCCAACCTCCCACAG-----

M.musculus CAGCCCTTCCAGCAGCCCTTCCAG-----
CCCCAGGCCATT---CCACCCCAG
Rattus CAGCCCTTCCAGCAGCCCTTCCAG-----
CCCCAGGCCATT---CCACCCCAG
Sus ---CCCGCCAGCAGCCCTTCCAG-----
CCCCAGCCCGTC---CAGCCCCAG
Bos ---CCCGCCAGCAGCCCTTCCAG-----
CCCCAGTCCATC---CAGCCGCAG
Human ---CCCGCCAGCAGCCCTACCAG-----
CCCCAGCCTGTT---CAGCCACAG
Equus ---CCTGTCCAGCAGCCCTTCCAC-----
CCCCAGCCTGTC---CAGCCGCAG
Ursus ---CCTGCCCAGCAGCCCTTCCAG-----
CCCCAGCCCGTC---CAGCCACAG
Tursiops ---CCCGCCAGCAGCCCGTCCAG-----
CCACAGCCT-----
Ornithorhynchus ---CCGGCCAGCAACCCTTCCAG-----
CCCCAGGTTCCC---CAGCAGCCG
Cavia ---
ACCTCCCAGCAGCCCTTCCAGCAACCCTTCCCCACCCAACCTGTT---CAGCCACAG
Monodelphis ---CCAGGCCAACCAACCATACCAG-----
CCCCAGCCAGCCAGCAACCACAG

M.musculus

Rattus
ATGCAGCCCCCTGGCACCACAGCCACCTCTGCCTCCACTGTTCTCCATGCAGCCCCCTGTCC
Sus
ATCCAGCCCTTGCTGCCACAGCCACCTCTGCCTCCGATGTTCTCCATGCAGTCTCTG---
Bos
ATCCAGCCCTTGCCGCCACAGCCACCTCTGCCTCCGATATTCCCCATGCAGCCTCTGCC
Human
ATGCAGCCCCCTGGCACCACAGCCACCTCTGCCTCCGATGTTCCCCATGCAGCCCCCTGCCT
Equus
ATCCAGCCCTTGCCGCCACAGCCACCTCTGCCTCCGATATTCCCCTTGAGCCCTTGCCC
Ursus
ATCCAGCCCTTGCCACCACAGCCACCTCTGCCTCCGATGTTCCCCATACAGCCCCCTGCC
Tursiops -----
CCCCTGCTGCCCCAGCCGCTCTGCCTCCGATGTTCCCCATGCAGCCCCCTGCC
Ornithorhynchus ATGCCACCGATG---
CCACAGCCGCGCTGCCTCCGATGTTCCCCATGCAGCCTCTGCC
Cavia
ATTCAGCCCTTGCCACCACAGCAAGCTCTGCCTCCAATGTTCTCCATGCAGCCCATTGCC
Monodelphis
GTGCTACCCTTGCCACCACAGCCACCTCTGCCTCCAATGTTCCCCATGCAGCCAATGTCC

M.musculus
CCCATTCTTCCTGAGCTGCCTCTGGAAGCTTGGCCAGCGACAGACAAGACCAAGCGGGAA
Rattus
CCCATTCTTCCTGAGCTGCCTCTGGAAGCTTGGCCAGCGACAGACAAGACCAAGCGGGAA
Sus -----
CTTCCTGACCTGCCTCTGGAAGCTTGGCCAGCAACAGACAAGACCAAGCGGGAG
Bos
CCCATGCTTCCTGACCTGCCTCTGGAAGCTTGGCCAGCAACAGACAAGACCAAGCGGGAG
Human
CCCATGCTTCCTGATCTGACTCTGGAAGCTTGGCCATCAACAGACAAGACCAAGCGGGAG
Equus
CCTATGCTTCCTGACCTGCCTCTGGAAGCTTGGCCAGCAACAGACAAGACCAAGCGGGAG
Ursus
CCCATGCTTCCTGACCTGCCTCTAGAAGCTTGGCCAGCAACAGACAAGACCAAGCGGGAG
Tursiops
CCCATGCTTCCTGACCTGCCTCTGGAGGCTTGGCCCGCAACAGACAAGACCAAGCGGGAG
Ornithorhynchus
CCGCTGCTGCCAGACTTGCCCCCTGGAGCAGTGGCCGGCAACTGACAAGACCAAGCGAGAG
Cavia
CCCCTTCTTCCTGATTTGCCTCTGGAAGCTTGGCCAGCAACAGACAAGACCAAGCGGGAA
Monodelphis CCCATGCTGCCAGAT-----
ATGGAAGCTTGGCCAGCCACTGACAAGACCAAGAGGGAG

M.musculus GAAGTGGCGTTTTCTCCTATGAAG-----
TGGTACCAGGGCATGACAAGGCATCCGCTT
Rattus GAAGTGGCATTCTCCTATGAAG-----

TGGTACCAGGGCACGGCAAGGCATCCGCTT
 Sus
 GAAGTGGAT-----
 Bos
 GAAGTGGAT-----
 Human
 GAAGTGGAT-----
 Equus
 GAAGTGGAT-----
 Ursus
 GAAGTGGTGAGTATCCCT-----
 Tursiops
 GAAGTGGTGAGTACACCC-----
 Ornithorhynchus
 GAAGTGGTGAGCGGTCCCTTTTCTCGCTCCTGG-----
 Cavia
 GAAGTGGAT-----
 Monodelphis
 GAAGTGGAC-----

M.musculus	AACATGGAAAGCACAAACAGAAAAA
Rattus	AACATGGAAACCACAACAGAAAAA
Sus	-----
Bos	-----
Human	-----
Equus	-----
Ursus	-----
Tursiops	-----
Ornithorhynchus	-----
Cavia	-----
Monodelphis	-----

Mammals-ENAM-AA-ALN.txt

CLUSTAL format alignment by MAFFT (v7.351b)

Ornithorhynchus
 MGRGTEANGGTETQRFQVQTPQGTSGMGEIRGQILKLKEATINHCQILKKKTLWIRSRKD
 Monodelphis
 M-----LLHQGNH-

Mus_musculus

M-----LLLQCRN-

Rattus

M-----LLLQCRN-

Cavia

M-----RLLHCRK-

Homo

M-----LVLRCRL-

Equus

M-----LLLPCRH-

Ursus

M-----LLLQYRH-

Bos

-----MLLQCRH-

Sus

-----MLLSCRH-

Tursiops

M-----LLLHCRH-

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Ornithorhynchus

CKWSFHFFQKWVQLLGLGNRPSGLMVNLGKARVASSATGTGSPTAPLPWHRIYAFDFGS

Monodelphis

RTFSPE-----

Mus_musculus

PTSPPK-----

Rattus

TASPPK-----

Cavia

GASFPK-----

Homo

GTSFPK-----

Equus

GTSFPK-----

Ursus

GASLPK-----

Bos

EASSPK-----

Sus

GASSPK-----

Tursiops

EASSPK-----

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Ornithorhynchus

YILLELTRYWQAVHQEFKFSGEDKHLNTVQIREANEYKDVIYICAEVGIARGKMKSFLLF

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Monodelphis      --LVDV-----
VPRGKMKTLMLF
Mus_musculus    --PCGL-----
VPNVKMS-LLVF
Rattus          --
PCDM-----VKMS-LLVF
Cavia           --LYNL-----
VPNGKMKMLLVF
Homo            --LDNL-----
VPKGKMKILLVF
Equus           --LDDL-----
VPSGKMKILLVF
Ursus          --LDNL-----
VPSGKMKILLVF
Bos            --LDYL-----
VPSGKMKILLVF
Sus            --LDNL-----
VPSGKMKILLVF
Tursiops       --LDNL-----
VPSGKMKSVLVF

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Ornithorhynchus LGLFGASTAMP--
MHMPRMPGFGSKSEEMMPYGQYNFMNSPHMAQLGPL--YGYGL----
Monodelphis     LSLFSCSIAMP--
MQMPRMGGFGSKSEEMRYGQYSFMNMPHMAHLGPL--YGYNI----
Mus_musculus
LGLLGVSAAMPFQMPMPRMPGFSSKSEEMRYNQFNFMNAPPMMPMPGP---YGNMPMP
Rattus          LGLLGVSAAMP--
MPMPRMPGFGSKSEEMRYNQFNFMNAPPMHMGP---WQNGLPMP
Cavia           LGLLGNSAAMP--
MYMPRMPGFGSKSEEMRYGQFNMHPPMAPMGPMGPYNGY----
Homo            LGLLGNSVAMP--
MHMPRMPGFGSKSEEMRYNQFNFMNGPHMAHLGPF--FGNGL----
Equus           LGLLGNSVAMP--
LQMPRIPGFGSKSEEMRYGQFNFMNSPHMAQLGPM--YGNM----
Ursus           LGLLGNSVAMP--
MQMPRMPGFGSKSEEMRYGQFNFMNSPHMAQLGPL--YGNM----
Bos
LSLLGYSIAMPLQMHMPRIPGFGSKSEEMRYGHFNMNPHLAHLSPF--YNGI----
Sus             LGLLCYSAAMP--
MQMPRMPGFGSKSEEMRYGHFNMNAPHMAHLGTL--YGNM----
Tursiops        LGLLCYSIAMP--
MQMPRMPGFGSKSEEQMRYGHFNMNSPQMVHLGPL--YGNM----

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Ornithorhynchus QL-PQFFQPPQM-PPWPQPPPNGWPAQNPGPPQGGKPQ-
 AKPGQSQNTKQPNPSQPKKP-
 Monodelphis RL-PQQFPQIQM-PVWPQPPPNAWLPRIPC-HRTYQDH-
 RKAGEGQEIPRPSQPLPTKP-
 Mus_musculus HM-PPQYPPYQM-PMWPPPVPNGW--QQ---PPMPNFP-
 SKTDQTQETAKPNQTNPEPQ
 Rattus HM-PPQYPPYQM-PMWPPPVPNGW--QQ---PPMPNFP-
 SKTEQTQETAKPNQTDPEPQ
 Cavia QI-PPYPQYPMPPMWPPLPSGW--QN---PPVPQHQ-
 TKTDQNQETQKPNQTPQKP-
 Homo ---PQQFPQYQM-PMWPQPPPNTWHPRK---SSAPKRH-
 NKTDQTQETQKPNQTSKKP-
 Equus QLPPQLFPQYQM-PMWPQPPAIMGRPKKSS-PSTQKPQ-
 SKTDQAPETPMPNQTQPKKS-
 Ursus ---PPVFPQYQM-
 PMWPQPPPMGHLQKSSPPSAPKRQKSKTDQIPETQNPNEPQPKKP-
 Bos QL-PQLFPQYQM-PMWPQPPPNNKSPQK---PSSPAAP-
 KQTDQAPETPSPNQPTDS-
 Sus QL-PQFFPQYQM-PMWPQPPPNNKHPQK---PSASKQ-
 SKTDPAPESQKPNQPKTP-
 Tursiops QL-PQLFLPYQM-PMWPQPPPNNKRPQKPSAPSAPKHQ-
 SKTDQAPETQKPNQPLKQP-
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Ornithorhynchus PQQQPPKQAAKQPAPGPSKP-TEETRQPMYPPFGNGFFP-----
 FQLQPWQIPP----
 Monodelphis PTT--PKPPTKQSPEGPPRP-KEEDQPPQYPPFGNGMFP-----
 FHQPPWHIPQFYNP
 Mus_musculus P----QKQPLKEPPNEAARA-KDDAQPPQFPPFGNGLYP-----
 YPQPPWPIPQ----
 Rattus P----QKQPLKEPPNEAARA-KDEAQPPQFPPFGNGLYP-----
 YQPPWPIPQ----
 Cavia P----EKQPSNQPPENPPKD-KADAQPPQFPPFNGLFP-----
 FQPPWPIPQ----
 Homo P----QKRPLKQPSHNQPP-EEEEQPPQAFPPFGNGLFP-----
 YQPPWQIPQ----
 Equus P----PKQPAQ-----TQA-EEEEQPPQAFPPFGNGLFP-----
 YHQPWQVPH----
 Ursus P----PKQPLKQPPPTPAQP-
 EEETQPPQAFPPFGNGLFPFNSGLYQPPWQVPH----
 Bos P----PNQHLKQPSTTTAQPEEETQTPQAFPPFGNGLFP-----
 YQPPWHIPH----
 Sus T----PKQPLNEPSPTPTQP-EEETQTPQAFPPFGNGLFP-----
 YQPLWHVPH----
 Tursiops L----PEHPLKQPSPTPTQP-QEETQTPQAFPPFGNGLFP-----

YQQLPWHVPQ----

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Ornithorhynchus -----QM-
 PPGYGRPPGSNEEGGNPYFGYFGHQGFGRPPYYSEEM-----
 Monodelphis GGFPSPNNPFHGRM-
 PPGYGRPPVSNEEGGNPYFGYFGYHGFGRPPYYSEEMFEQDFE
 Mus_musculus -----RGPPTAFGRPKFSNEE-GNPYYAFFGYHGFGR-
 PYYSEEMFE-DYE
 Rattus -----TGPPTGFGRPKFSNEE-GNPYYAYFGYHGFGR-
 PYYSEEMFE-DYE
 Cavia -----RMPPPGYGRPLSNEDGGNPYFGFFGYPGFGGR-
 PYYSEEMFE-DYE
 Homo -----
 RLPPPGYGRPPI SNEEGGNPYFGYFGYHGFGRPPYYSEEMFEQDFE
 Equus -----RL-
 PPGYGRPLGSNEEGGNPYFGYFGYHGFGRPPYYSEEMFE-DFE
 Ursus -----RV-
 PPGYGRPPGSNEEGGNPYFGYFGYQGFGRPPYYSEEMFEQDFE
 Bos -----KI-
 PPGFGRPPGSNEEGGNPFFGFFGYHGFGRPPYYSEEMFE-DFE
 Sus -----RI-
 PPGYGRPPTSNEEGGNPYFGFFGYHGFGRPPYYSEEMFEQDFE
 Tursiops -----
 PPGYGRPPVSNEEGGNPYFGYFGYHGFGRPPYYSEEMFEQDFE

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Ornithorhynchus KEEEEKESPKED-----
 SPSPEPTANSTVAETNSTQPSGSPQAGSQGGNATDPGQSAGNGS
 Monodelphis KPKEEDPPKVE-----
 STTAAPPTNSTVPETNSTQATVPVSGGSQGGNETST---TGNEA
 Mus_musculus KPKEKDPPKPEDPPPDDPPPEASTNSTVDPANATQSI---P---
 EGGNDTSP---IGNTG
 Rattus KPKEKDPPKPEDPPPDDPPPEASTNSTVDPANATQSI---
 PGGGQGGNDSSP---VGNTG
 Cavia KPKEEDPPKPE-----DPPSEPSANSTVPETNSTQLT-----
 NQGKNDTGP---TLNSI
 Homo KPKEEDPPKAE-----SPGTEPTANSTVTETNSTQ---
 PNPKGSQGGNDTSP---TGNST
 Equus KPKEEDPPKAE-----
 SPATEPSSNSTVPENNSTQPNAPNPRGSQGGNDTSP---TGNSG
 Ursus KPKEEDPPKKE-----
 SPAAEPSGNSTGPETNSTQSNAPIPGGSQGGNDTSP---TG---
 Bos KPKEEDPPKTE-----
 TPATDPSVNSTVPETNSTQPGAPSPRAGQGGNDTSP---AGNNG

Sus KPKEKDPPKTE-----TPATEPSVNTTVPETNSTQPNAPNPR-----
 GNDTSP---TGTSG
 Tursiops KPKEKDPPKTE-----
 SPATDPSVNSTVPETNSTQSNAPNPRGSQGGNDTSP---TGNSV
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Ornithorhynchus
 PAQTPGHGTVPDNGEPPGPLLNASDHGGARGPKPTGPGPGQPPFRGRPANPNAAPGFAPAG
 Monodelphis EVQNP-----GINLAPAVNVSGDGPQSQVP--
 PGPYQPTILENSPNPNLR-GFPIS
 Mus_musculus PGPNAGNNPTVQNGVFPKPNVSVSGQGVPKSQIP--
 WRPSQPNIIYENYPYP----NYPSE
 Rattus PGPNAGNNPTVLNGVFPKPNVSVSGQGVPKNQIP--
 WRPSQPNIIYENYPYP----NYPSE
 Cavia PGLNTGNNPTVQNGIFPLPTVNFSGQVIPGSQIP--
 WKPNQPNIIYGSYPKPNIR-NSPSG
 Homo PGLNTGNNPPAQNGIGPLPAVNASGQGGPGSQIP--
 WRPSQPNIRENHPYPNIR-NFPSG
 Equus YGPNTVSNRTVQNGVILPPTVNI SGQGI PRRQIP--
 WRPSQPKIIHENYPNPNIR-NFPAR
 Ursus --PNM-----AQNGVNSSPTVNVSGQAVPRTQIM--
 WGPSQPNIIHENYPNPNNR-NFPVG
 Bos QDPNTVSNPTVQNN-----PVVNVSGQGVPRSQTP--
 WRPSQTNIIHENYPYPNIR-NFPAG
 Sus QGPNPRSNPTGQNG-----PAVNVSGQGVPRSQSP--
 WGPRQTI IHENYPNPNIR-GFPAR
 Tursiops QGSNTVSNPTAQNS-----PAVNVSGQGVPRSQTP--
 QGPSQTNIIHENYPNPNIR-SFPAG
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Ornithorhynchus
 RQRRPFVHPFGRPFDRPVGRPVGRRDHGPTYGNTPKARGPLRWNVAVTSEGKRV-ARPGYP
 Monodelphis RQW-----SQTSPVGPRLMGPFYRNYPNQRSY-
 QWPSLAYVSKQI-VRPGNT
 Mus_musculus RQW-----QTTGT-QGPRQNGPGYRNPQVERGP-
 QWNSFAWEGKQA-TRPGNP
 Rattus RQW-----QTTDT-QGPKQNGPGYQNPQIQRGP-
 QWNSFAWEGKQATTHPGNP
 Cavia RQS-----NPTHATGQRPPGPSYRNQPGQWDA-
 QGNSFAWEGKQA-AGKPNP
 Homo RQW-----YFTGTVMGHRQNRPFYRNQQVQRGP-
 RWNFFAWERKQV-ARPGNP
 Equus RQW-----RPTGTATGNRQNGPFYRN-QVQRDP-
 QWNSFAWEGKRT-VHPGNP
 Ursus RQW-----RPTGTIMGHRQNGPFYRNQQFQRGP-

RWNSFALERKQA-VRPGNP
 Bos RQW-----HPTGTSMGNRRNGPFYRNQQIQRAP-
 RWNSFVLEGKQA-IRLGYP
 Sus RQW-----RPPGPAMGHRNGPFYRNQQIQRGP-
 RWNSFTLEGKQA-VRPGYP
 Tursiops RQW-----RPTGTATGHKRNGPFYRNQQIQRGP-
 RWNSFVLEGKQA-VRPGYP
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Ornithorhynchus
 MYRRFPVAAAPGRGFPNRAGNPLNLRKNPQAP-----
 Monodelphis AYQKVYPYISKSN-
 SPNHVSNPANNRRKPQGP-----
 Mus_musculus TYGKPPSPTSGV----
 NYAGNPVHFGRNLPGPNKPFVGANPASNKPFVGANPASNKPFV
 Rattus TYHKPSPTSRVN-
 YPNYAGNPVNFGRKLPKPKPFMGANPASNKPFVGANPASNKPFV
 Cavia TYHKAYTPTSARN-
 YPSYAGNPANFRRKLQGP-----
 Homo VYHKAYPPTSARN-
 YPNYAGNPANLRRKPQGP-----
 Equus IYRKSYPPTTRGN-
 SPNNAGNPANIRRKPQGP-----
 Ursus IYRKAYASTARGN-
 SPNHAGNLGNFRRKPQGP-----
 Bos IYRRAYASTVRGN-
 YPNYAGNPVNFRRKPEGP-----
 Sus TYRRVYGSTARSN-
 PPNYAGNSANLRRKPEGP-----
 Tursiops IYRRAYASTARGN-
 SPNYAGNPANFRRKPEGP-----
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Ornithorhynchus

 Monodelphis

 Mus_musculus
 ANPASNKPFVGANPASNKPFVGANPASNKPYVGANPASNKPFIGANPAANKPSIGTNPAA
 Rattus
 TNPASNKPFVGANPASNKPFVGANPASNKPFVGANPASNKPFVGANPASNKPFMGTNPAA
 Cavia

 Homo

 Equus

Ursus

Bos

Sus

Tursiops

Ornithorhynchus

Monodelphis

Mus_musculus NKPSIGTNPAANKPFVRNNVG-----
ANKPFVGTNPSSNQPF

Rattus
NKPSIGTNAASNKPFVGTNAGTNKPFMGINVASNKPFMGTNPASNKPFVGTNPASNKPFV
Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Ornithorhynchus -----
AKHPGEANS GPVYSQRGGLMAPREPVAS PQENPPSPREKPSFP
Monodelphis -----TKQPEEINGGLA-
GPKLGTAHKEEQIQNP KENSVTQRERITFP
Mus_musculus RSNQASNKPFMR SNQASNKPFVGTNVASV-
GPKQVTVSHNMKTQNPKEKSLGQKERTVTP
Rattus RSNHASNKPFV GANAASNKPFVGTNVPSV-
GPKQVTVSHNMKTQNPKEKSLGQKERTVTP
Cavia -----NKPFVGTNVTPM-
SPKQGTIGRNEKIQNPKEKSLGQKESTINP
Homo -----NKHPVGTTVAPL-
GPKPGPVRNEKIQNPKEKPLGPKEQIIVP

Equus -----NKPPVVTNV-PL-
 GPKHDTVLDLNEKVQNPREKPPDQKE-IVIP
 Ursus -----NKHPVGTNVAPL-
 SPKQGTVVHNEKIQNPGEKPVGPKERIVIP
 Bos -----SKQPEGT-IAPL-
 GPKHGTTGHNENIQNPKEKPVSKERIVIP
 Sus -----NKNPMVTNVAPP-
 GPKHGTVDQENIQNPKEKQVSQKERTVVP
 Tursiops -----NKHPVGTNVAPL-
 GPKHGTVGHNENIQNPKEKPVSKKEGIVIP

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Ornithorhynchus
 TRGPAVPWRKPQNYGPGKPVYRPPLSEGRPADPGSPFPDPRENPHYPRGDATDRRFLSSG
 Monodelphis TRDPTSTWRNSQGYETNKSNYKLTPPQGSVPSVNSVDQPEN-
 YYPRVDS--RRFPAS-
 Mus_musculus
 TKDASNPWRSKQYGINNPYNLPRSEGSMVGNFNSFDQQENSYFSKGAS--KRVSPSN
 Rattus
 TKDTGNPWRSKQYGINNPYNLPHPEGSMVGNFNSFDQQENTYFSRGDS--RKVASPN
 Cavia
 TKGMSGSRNSQYPGVNKPNYGWPHPEDNMLGNFNSVNQYENSYYPRGEV--IKVPSSN
 Homo
 TKNPTSPWRNSQQYEVNKSNYKLPHSEGYPVPNFNSVDQHENSYYPRGDS--RKVPNSD
 Equus
 TRDPPGPWRNSQDYGVNKSNYKLPHSEGNILVPNFNSVDQRENSYYPRGDI--IRAPNYD
 Ursus
 TRDPSGPWRNSQDYGVNKSNYKLPHPEGNILVPNFNSIDQHENSYYPRGDS--RRAPNSD
 Bos
 TRDPNGPWRNSQDYGVTKSNYKLPHPEGNILVPNFNSIDQHENSYYPRGDS--RGTPNSN
 Sus
 TRDPSGPWRNSQDYGVNKSNYKLPHPEGNILVPNFNSIDQRENSYYPRGES--KRAPNSD
 Tursiops
 TRDPSGPWRNSQDYGVNKSNYKLPHPEGNILVPNFNSIDQRENSYYLRGDS--RRAPNSN

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Ornithorhynchus GSAPGRHFPEGIVLKP-----EDDQPPSKQKPFHP-VTSERTP---
 REPSPT-KPQRT
 Monodelphis --IQASNFPKGIVSEPRKGPSDSEINPPEIKHGTHQ----
 TDEGPYPKESFFLRSNTWN
 Mus_musculus IQIQSQNLPKGIALEPRRTPFQSETKKPELKHGTHQP-
 AYPKKIPSPTRKHFFAERNTWN
 Rattus RQIQSQNLPKGIALEPRRTPFESETKRPELKHSTNMP-
 VYPKKNPSPTRGHFPAGRNNWN
 Cavia AKTQSQNFPKRVALEPKRIPYESQTMQPELKHSTHQP-
 IYPEVIPS PKREHFPAGRNTWS

Homo
 GQTQSQNLPGIIVLGSRRMPYESETNQSELKHSSYQPAVYPPEEIPSPAKEHFPAGRNTWD
 Equus GQTQSQNLPGIILEPRRIPIYESETNQPELKHSTYQP-
 VYPEETPSPAREHFPPTERNTWN
 Ursus GQTQTQNLPGIILEPRRNPIYESETNQPELKHSTYQP-
 VYQEEIPSPAREHFPAGRNTWN
 Bos GQTQSQNLPGIILEPRRIPIYESEINQPEIKHSTHQ-
 VYPEGSPSPARERFPAGRNTWN
 Sus GQTQTQIIPKGIVLEPRRIPIYESETNQPELKHSA-
 VYTEGIPSPAKEHFPAGRNTWN
 Tursiops GQTQSQNLLKGIILEPRRIPIYESEINQPELKH-
 SIYQP-VYPEGFSPAREHFNAGRNTWN
 : : : . : . * : .

Ornithorhynchus SPEPPPPLEEGPGRQDKSLTYPPISPRSGIPYDPH---
 HPYDPK-----GTWDEGNE
 Monodelphis LQKGSPIFEDEPTKQEGSLLYPALGARENVPYPEY---
 VPYDPQRSSLYARGNMWDEGDE
 Mus_musculus RQKILPPLKEDYGRQDENLRHPSYGSRGNIIFYHEY---
 TNPYHNEKSQYIKSNPWDK--S
 Rattus HQKTLPLKEGHGRKEENLRHPPYGSRGNVFYHEY---
 NNPYPNEKSPYLRGNTWDKRIS
 Cavia HHEIPPPFKEDPGKQDKHLPHVSPGSQDSVFYHKY---
 NSFYTRENSPYTGSNTWEKRAD
 Homo HQEISPPFKEDPGRQEEHLPHPSHGSRGVSFYPEY---
 NPYDPRENSPYLRGNTWDERDD
 Equus HQEISPHFKEDPGRQEEHLPHPSLGSRGGVYYPDY---
 YPYDPRENSPYFRGNAWDERNY
 Ursus
 HQEISPSFKEDPGRQEEHLPHPSHGSRGGVYYPDSYYPNSYDPRENSPYPR-
 SNTWDERDD
 Bos QQEISPPFKEDPGRKEEHLPHPSLGSRGRIYYTDY---
 NPYDRRENPPYLRNSWDERND
 Sus QQEISPPFKEDPGRQEEHLPHLSHGSRVHVYYPDY---
 NPYDPRENSPYLRNSNTWYERDD
 Tursiops QQEISPPFKEDPGRHEEHLPHPSHGSGGRVYYPDY---
 NPYDPRENSPYPRSNTWAERDD
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Ornithorhynchus
 PTPSSGPAEQGRQSPSPRGMQRGEVPYNEEDPVDPTGDEPNLGPWPWE-ETANGKED
 Monodelphis
 FPGTFRPAGQGNPLHSLNSPSGQRHRSTDNEEDPIDPTGDEFYRGPDAGG-KESNFKGS
 Mus_musculus SPSTMM---RPENPQYTMTSLD-
 QKETEQYNEEDPIDPNEDESFPQSRWGDEEMNFKGN
 Rattus TPGTMM---QENPQYTMSLSD-

QKETEYNEEDPIDPNEDESFPGQSRWGDELSFKGN
Cavia SPKT-----QAKTPQYPLKNTD-
QKETIQYNEKDPSPDTRHGPFPGLSRWGEEVLSFNER
Homo SPNTMG---QKESPLYPINTPD-
QKEIVPYNEEDPVDPTGDEVFPGQNRWG-EELSFKGG
Equus SPNTMG---RLKNPLYPVNTPD-
VKETVLYNEEDPTDPTGGEAFPGQSRWGEESLQOG
Ursus SPNNIG---QPKNSLYPINTPE-
LKETVPYNEEDPLDPTGDESFPGQSRWGMEETSFKEG
Bos PPNTMG---QSENPHYPMNTPD-
PKETIPYNEEGPADPTGDETFPGQTRWSVDESFKTA
Sus SPNTMG---QENPHYPMNTPD-
PKETIPYNEEDPIDPTGDEHFPGQSRWMEELSFKED
Tursiops SPNAMR---QENPHYPMNTPD-
PKKTIPYNEEDPIEPTGDESFPGQSRWSVAESSFKGD

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Ornithorhynchus PS-RYHKSPQYQSRATEPQDYPPYPEG-GLEKHR-
DFPYGDFYPRGPEDNLQPYNGADQ
Monodelphis -QVRYRERYPYAPSHPSKPKEYPQHSTD-NLERQRNP-
SYGEYYPW----HFPPYNFAPP
Mus_musculus PTVRQYEGEHYA---STLAKEYLPYSLS-
NPPKPSDFPYSEFYFYPWNPQETFPIYNGPT
Rattus PTLRQYEGEQYT---STLAKEYLPYSLS-
NPPKPSDFPYSEFYFYPWNPHEFPIYNGPT
Cavia PMGRHNDGKQYA---SNQPKEYLPYPLD-
NPSKPREESPYTDFYPWSLDETFPSYSPGPT
Homo PTVRHYEGEQYT---SNQPKEYLPYSLD-
NPSKPREDFYSEFYFYPWSPDENFPSYNTAST
Equus PTVRHYEGEQYT---SNQOKEYLPYSLD-
NPSKPREDFPYGEFYFYPWNPDENFLSYDTAPT
Ursus PTVRHYEGEQYT---SNQPKEYLPYSLD-
NPSKPREDFPYGEFYFYPWNPDENFPSYNTAPT
Bos PTAR-YEGKQYT---SNQPKEYSPYSLD-
NLPKPREYFPYGEFYFYPWSPDENFPSYNTAPT
Sus PTVRHYEGEQYT---SNQPKEYLPYSLD-
NPSKPREDFLYGEFYFYPWNPENFPSYNTAPT
Tursiops PTVRHYESEQYT---
SNQPKEYLPYSLDINPSKPRKDFPYGEFYFYPWSPDENFPSYNTAPT

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Ornithorhynchus L--PVEGRG-
YYTHDAVGQGGPLQFPSRDSWDWGLRSAAQERRAPYDERDSWDHAINSPK
Monodelphis
LTPPRENSGYYPNALEQEEESTPSPSWGSDQKNYVPAKKGRIPYYNRYFWDQATNLHK

Mus_musculus IAPPVDPRS-
 YYVNNAIHQEESTLFPSTWSDHRNQAERQKESEPYFNRRNVWDQSINLHK
 Rattus IAPPVDPRS-
 YYVNNAVGQEEESTLFPSTWSDHRNQAERQKESEPYFNRRNVWDQSMMLHK
 Cavia VSPPGKNRG-
 HQVNNAMRQEGSALFSPNSWDQGIQVQGGQEESEPOFHRNYWDQATNLHE
 Homo MPPPIESRG-
 YYVNNAAAGPEESTLFPSSRNSWDHRIQAQGQRERRPYFNRRNIWDQATHLQK
 Equus VLPPVENKG-
 YYTSDVIGQEENTPFPSWNSWDHRIQAQGQKEIRPYFNINFWWDQPTNLHK
 Ursus VPPPVESRG-
 YYANNAVQEEESTLFPSSWNSWDHRIQTQGGQKERRPYFNRRNFWDQPTTLHK
 Bos IPLLVENRG-
 YYPTNAVQEEENTMFPSSWNSWDHMQVQGGQKERRPYFTRTFWGQPTNLPK
 Sus VSSPVESRG-
 YYANNAVQEEESTMFPSSWSSWDPRIQAQGQKEGRPYLNRNFWDQSTNLYK
 Tursiops EPRPVESRG-
 YYANNAVQEEESTMFPSSWNSWDHRIQAQEQKERKPYFNRRNFWDQPTNLHK

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Ornithorhynchus STAGAT---ETLSPSHSVPAGIRGKPH-
 EESVDWSYRGGQVSDLGVPEAEGPALMEPVAR
 Monodelphis
 SAASALEQREHQPHSSSFAGLRGSLTYQETENLNYSVHNNRINTPEKGFVPTDSVIQ
 Mus_musculus SNI--P----NHPYSTTSPARFPKDPTWFEGENLNY-
 DLQITSLSPPEREQALAFDFLPQ
 Rattus SNIQNP----NHPYSTTSPAGFPKDPTWLEGENLNY-
 DLQITSLSQPEREQALAFDLRPQ
 Cavia --VGPPNQRRNYPYPSQPHVGLQKTPTWQEGKNLNY-
 DMQMTRLYSPERSHLAFPDVMPQ
 Homo APARPPDQKGNQPYYSNTPAGLQKNPIWHEGENLNY-
 GMQITRMNSPEREHSSFPNFIPP
 Equus APANPPHQKENQPYSSNSPAGLQKNPTWPEGENLNY-
 GMQITRLNSPEGEHVAFPDSEIPL
 Ursus APPSPPHQKENQPYPSNSPAGLQKIPTWREGENLNY-
 GMQITRLNSPDGEHLAFDPLIPP
 Bos APASPPYHKENQPYFSNSPTGLQKDPTWHEGENLNY-
 GMQITRLNSPEGGHAFDPLIPP
 Sus TPTSSPHQKENQPYSSNSPAGLQKNPTWHEGENLNY-
 GMQITRLNSPERDHLAFDPLIPP
 Tursiops APASSPYQKENKPYSSDSPAGLQKNPIWHEGENLNY-
 GMQITRLNSPEREHLVFPDLIPP

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Ornithorhynchus

SDPADPREASSYPVAVARSSCCAGGSPGPRDVPLAPPDYPLALPGYLPLDPLDYPPLDR
 Monodelphis
 NNLIYQGEVYSYSPASQRSPCCAGESPGPRESPLIS-----
 Mus_musculus SYPTGQNEAHLFHQ-
 SQRGSCCIGGSTGHKDNVLAL-----
 Rattus SYPTGQNEAHLFHQ-
 SQRGSCCIGGSTGHKENVLAL-----
 Cavia SYPLGQTESHLFHP-
 NPSSCCVGAAGPHKNPLAL-----
 Homo SYPSGQKEAHLFHL-
 SQRGSCCAGSSTGPKDNPLAL-----
 Equus SYPAGQKEAHLFHL-
 SQRSPCCVGSIGPEDNPLAL-----
 Ursus SYPAGQKEAHVFHL-
 SQRGPCCAGGSTGHKDNALAL-----
 Bos HYPGSQKETRLFHL-
 SQRGPCCAGGSIGPKDNPLAL-----
 Sus DYPGGQKESHVFHL-
 SQRGPCCAGGSMWPKNPLAL-----
 Tursiops SYPAVQKGAHLFHL-
 SQRGPCCAGGSTGPKDNPLAL-----

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Ornithorhynchus
 PDYLPPAPRDYPPDPNYSPLDTPDYPPHYPLAPQDYSSPLGLSLWELQVGGPRSPGG
 Monodelphis -----
 LDYSPFFGLVSGDDGERNPPTTEG
 Mus_musculus -----
 QDYTSSYGLPPRKNQETSPVHTES
 Rattus -----
 HDYTSSYGLPPRKTQEISPVHTES
 Cavia -----
 QDYTPSYGLAPGENHNTNPTYTES
 Homo -----
 QDYTPSYGLAPGENQDTSPLYTDG
 Equus -----
 QDYTPSFGLLPGENQDTSLLYMED
 Ursus -----
 QDYTPSFGPVPGETQDTSPLYTED
 Bos -----
 QDYTLFFGLAPGENQDTSPLYTED
 Sus -----
 QDYTQSFGLAPGENPDTSIGYAED
 Tursiops -----
 QDYTPSFGLALGENQDTSPLYIED

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Ornithorhynchus SRSRHVQQAASPVGYPAIRNGTEEAPPTRREEPAPSRDGLAP-
 GRSPPCSLRPRASPRA
 Monodelphis
 IHMKHARHIIYSTDIQPNQRNSSEKNLSEKGANPDPFRADTAMLKKSSPCSKRSPAGQTE
 Mus_musculus
 SYIKYARPNVSPASILPSQRNISENKLTAESPNSPFGDGVPTVRKNTYPYSGKNQL-ETG
 Rattus
 SYTKYAKPNVSPASILPNQRNISENKLTAESPNSPFGDDVPTVRKNTPNVSGKNQL-ETG
 Cavia SHTTHTRPNVSPSILPGQRNSSEKKLPGESTKPSLTDNVSSL-
 KNAPCSAKTQQGTGG
 Homo SHTKQTRDIISPTSILPGQRNSSEKR---ESQN--
 PFRDDVSTLRRNTPCSIKNQLGQKE
 Equus
 SHTNHARDTISPTIIPPVEGNSSEKRLPGESQNPSPFGDDVSPLRNIPCSIKNQLGQRG
 Ursus
 SHTKHARHTISPTSNLPDQRNSSEKRLPGESQNPSPFRDDVSTLRRNTPCSMKNQLSQRG
 Bos
 SHTKHERYTISPTSILPGQRNSSEKRLPGESQNPSPFRDDVSTLRRNTPCSINNQLSQRG
 Sus
 SHIKYARQTVSPTSIVPGQRNSSEKILPGESQNPSPFKDDVSTLRRSTPCSVKSQLSQRG
 Tursiops
 SQTTHVRHTISPTSILAGQRNSSEKRLPGESQNPSPFRDDMSTLKRNTPRSI-NQLGQRG
 : . . . * : * : . : . . . : .

* *
 Ornithorhynchus
 GLAFPEAGLPPAKPAPCFKSRLRGDVSVEQILDPPPVAGNDGPAPGDLAVVVPERDP
 Monodelphis SVPFSEADSLQA-
 NMPCRKSNLRGEGNNVLAKILGVNQFNARTSNLIPEEL--EAPEENL
 Mus_musculus
 IVAFSEASSSQPKNTPCLKSDLGGDRRDVVKQFFEGSQLSERTAGLTPEQLVIGIPDKGS
 Rattus
 IIALSEASSSQPKNTACLKSDLGGDRRDVVKQFFEGTQLGERTAGLTPEQLVIGSPDKGS
 Cavia VRSFPKASAPQS-
 NTLCLSNLDGGDGNVLEQIFEGNHLSSERTVNLTPEQLFIGTLNEGL
 Homo
 IMPFPEASSLQSKNTPCLKNDLGGDGNVLEQVFEEDNQLNERTVDLTPEQLVIGTPDEGS
 Equus
 IMPIPEASSLQPKNTPCLKSDLGGDGNVLERIFEGNQLNERTVDLTPEQLVIDIPDEGP
 Ursus
 IMPFPEATSLQSKNMPCLTSDLGGDGNVLEQIFEDNQFDERTADLTPEQLVIGSPDEGP
 Bos IRPLPEASSLQSKNIPCLKSDL-
 EDGNHVLEQTLEGNQLNERPVDLTPEQLVMDTPDEGP
 Sus
 IMPLPEANSLQSKNTPCLTSDLGGDGNVLEQIFEGNQLNERTVDLTPEQLVFGTPDKEP
 Tursiops IMPFPETSSLQSKNTPCLKSDLGGEG-

NILEQIFEGNQLNERTVDLTPEQLVIGTPDEGP

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Ornithorhynchus GPVGI----
RGDPEPGPEAGAPGFQWVPCFGSETQNHYLAWTGAPPGNEKPDPSEPVSTA
Monodelphis
GPENIQSEGGGSEGRVKQKGVPNIQKVPCLHSLKDHLLSSTGAPLGKRRPGLSTGEPAM
Mus_musculus GPDSIQSEVQGKEGEMQQORPPTIMKLPFCFSN-
SKFHSSTTGPPINRRPTLLNGALST
Rattus
GPDGTHSEVQGSEGEMQQORPPTIRKLPCFGSKLAKLHSSSTGPPTNNGGPSLPLNGALST
Cavia
KPPGIQKEMQGEEDDRPQORPPSILQVPCFGSOLTQLHSSSTGTPSSSRPGRPSGGDLTK
Homo
NPEGIQSQVQENESERQQORPSNILHLPCFGSKLAKHSSSTGTPSSDGRQSPFDGDSIT
Equus
KPEGIQSEVQNEGERQQORPPSILQLPCFGSNLAKYHSSGAGTPSSIGRPGLFDGDPIM
Ursus
QPEGIQSEVQNEDEGQQORPPSILQLPCFGSEIAKYHSSSTGTPSSIGRQGFDEDPIM
Bos
KPEGIPSEVQNGGKRQQORPSTILKLPCFDSKLTKEYTSSTGTPSSLGRQGSFDGDPIM
Sus
RPEGIPNEMQGNESERQQORQSSILQLPCFGSKLANYHTSSIGTPSSLGRQDSFDGDPIM
Tursiops KPEGIPSEVQNEGER-
QORPPSILQLPCFGSKLTKEYHTSSTGTPSSIGRQGSFDGDPIT

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Ornithorhynchus PAETLD-AVSGLP TGVPSEGPSL-
PRSELSPPFKTLQWEVADGPEQQGADCSLLQN
Monodelphis VSAQPSSTLTGLTAREQLGGTNIDPLVASE-PPLSFPS--
LSIPKNAEFQDCLLLHS
Mus_musculus PTESPN-TLVGLATREQLKSINVDKLNADHHTTLESFQ---
GTSPQDQ--GCLLLQA
Rattus PTESPD-TLVGLATREQFKSINVDQLNADGHTTLESFQ---
DTSQQDQAHGCLLLQA
Cavia PTENPN-TFVGFATGEPFRSINADQLSVAGHTPFESFQ--
RGTDQPQDIQDCLLIQV
Homo PTENPN-TLVELATEEQFKSINVDPLDADEHSPFEFLQ--
RGTNVQDQVQDCLLLQA
Equus PTEIPN-SLAGLATGAEFQSSIVDPLNADEHTSFQDYLQ--
IGTDPEQDQVQDCLLLQA
Ursus PTESPN-SLSRLATGAEFQSSINVDPLNADEHTPFDSLQ--
LGTNPQDQVQDCLLLQA
Bos PTEIPN-SLAELATGAQFQNINVDPLNADDHTPFDPQLQ--
VGTNPQDQVQDCLLLQA
Sus PTETPN-SLAGLATGAQFQNINVDPLNEDEHTPFDSLQ--

```

IGTNPQDQVQDCLLLQA
Tursiops          PTEIPN-SLAELATRAQFQNINVDPLNADEHTLFDSLQ--
VGTNPQDQVQDCLLLQA
:      .  .:  .:  .  .      .  .:  .      :  .
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Mammals-ENAM-CDS-ALN.txt

CLUSTAL W multiple sequence alignment

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Ornithorhynchus
ATGGGGAGAGGAACTGAAGCCAATGGTGGCACTGAAACGCAGAGATTCCAGGTCCAAACT
Monodelphis
ATG-----
Mus_musculus
ATG-----
Rattus
ATG-----
Cavia
ATG-----
Homo
ATG-----
Equus
ATG-----
Ursus
ATG-----
Bos
-----
Sus
-----
Tursiops
ATG-----

Ornithorhynchus
CCCCAGGGCACCAGCGGCATGGGAGAGATTGAGGGCAGATTCTCAAGTTGAAGGAGGCG
Monodelphis
-----
Mus_musculus
-----
Rattus
-----
Cavia
-----
Homo
-----

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Equus

Ursus

Bos

Sus

Tursiops

Ornithorhynchus

ACGATAAACCACTGCCAGATTTTGAAGAAGAAAACCTCTATGGATCCGCTCCCGGAAAGAC

Monodelphis

TTGCTGCATCAGGGCAACCAC---

Mus_musculus

TTGCTGCTTCAGTGCAGAAAT---

Rattus

TTGCTGCTTCAGTGCAGAAAT---

Cavia

CGACTGCTTCACTGCAGAAAG---

Homo

TTGGTGCTTCGGTGCAGGCTT---

Equus

TTGCTGCTTCCGTGCAGACAT---

Ursus

TTGCTGCTTCAGTACAGGCAT---

Bos

ATGCTGCTGCAGTGTAGGCAT---

Sus

ATGCTGCTTTCGTGCAGGCAT---

Tursiops

TTGCTGCTGCACTGCAGGCAT---

Ornithorhynchus

TGCAAGTGGAGTTTCCATCACTTTCAGAAGTGGGTCCAGGTTCTCTTGGGCTTGGGAAAT

Monodelphis

Mus_musculus

Rattus

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Ornithorhynchus

CGCCCCTCCGGGTTGATGGTCAACCTTGGCAAAGCCAGGGTAGCCAGCTCGGCCACTGGA

Monodelphis

-----AGG

Mus_musculus

-----CCG

Rattus

-----ACA

Cavia

-----GGG

Homo

-----GGA

Equus

-----GGA

Ursus

-----GGA

Bos

-----GAA

Sus

-----GGA

Tursiops

-----GAA

Ornithorhynchus

ACTGGCAGTCCCACCGCCCCTCTACCCTGGCACCGGATATATGCCTTTGACTTTGGCTCC

Monodelphis

ACATTTTCTCCTGAA-----

Mus_musculus

ACTTCTCCTCCAAAG-----

Rattus

GCTTCTCCTCCAAAG-----

Cavia

GCCTCTTTTCCTAAA-----

Homo

ACCTCTTTTCCTAAA-----

Equus

ACCTCTTTTCCTAAG-----

Ursus
GCCTCTCTTCCTAAG-----
Bos
GCCTCTTTCCTAAG-----
Sus
GCCTCTTTCCTAAG-----
Tursiops
GCTTCGTCTCCTAAG-----

Ornithorhynchus
TACATCTTATTAGAACTCACCAGATATTGGCAAGCTGTGCACCAGGAGTTTAAGTTCAGT
Monodelphis -----
CTAGTTGACGTG-----
Mus_musculus -----
CCATGTGGCCTG-----
Rattus -----
CCATGTGACATG-----
Cavia -----
CTGTATAACTTG-----
Homo -----
CTAGATAACTTG-----
Equus -----
CTAGATGACTTG-----
Ursus -----
CTAGATAACTTG-----
Bos -----
CTAGATTACTTG-----
Sus -----
CTAGATAACTTG-----
Tursiops -----
CTAGATAACCTG-----

Ornithorhynchus
GGGGAAGACAAGCATCTAAATACAGTTCAGATAAGGGAAGCAAATGAGTACAAGGATGTG
Monodelphis

Mus_musculus

Rattus

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Ornithorhynchus

TACATTTGTGCTGAGGGGTGGGGATAGCGAGGGGGAAGATGAAGAGTTTCCTGTTATTC

Monodelphis -----

GTCCCAAGGGGAAAGATGAAGACTCTCCTGATGTTT

Mus_musculus -----

GTACCAAATGTAAAGATGAGT---CTCCTTGTTTTTTC

Rattus -----

GTAAAGATGAGT---CTCCTTGTTTTTTC

Cavia -----

GTACCAAATGGAAAAATGAAGATGCTCTTGGTATTC

Homo -----

GTACCAAAGGCAAATGAAGATTCTCCTGGTCTTT

Equus -----

GTACCAAGTGAAAAATGAAGATTCTCCTGGTCTTT

Ursus -----

GTACCAAGTGAAAAATGAAGATTCTCCTGGTCTTT

Bos -----

GTACCAAGTGAAAAATGAAGATTCTCCTGGTCTTT

Sus -----

GTACCAAGTGAAAAATGAAGATTCTCCTGGTCTTT

Tursiops -----

GTACCAAGTGAAAAATGAAGAGTGCCTGGTCTTT

Ornithorhynchus TTAGGCTTGTTTGGAGCTTCCACTGCGATGCCG-----

ATGCACATGCCCCGCATGCCT

Monodelphis CTCAGTCTGTTTCAGCTGTTCCATTGCCATGCCT-----

ATGCAGATGCCTCGCATGGGC

Mus_musculus

CTGGGTCTGCTTGGTGTCTCTGCTGCCATGCCATTCCAGATGCCAATGCCCCGAATGCCT

Rattus CTGGGTCTGCTTGGGTCTCGGCTGCCATGCCA-----

ATGCCAATGCCCCGAATGCCT

Cavia CTAGGTCTGCTTGGTAATTCTGCTGCCATGCCA-----

ATGTACATGCCCCGAATGCCT

Homo CTAGGGCTTCTTGGTAATTCTGTTGCTATGCCA-----

ATGCACATGCCCCGAATGCCT

Equus CTAGGTCTGCTTGGCAATTCCGTTGCTATGCCA-----

CTGCAAATGCCCCGAATACCT

Ursus CTAGGTCTGCTTGGTAATTCTGTTGCTATGCCA-----

ATGCAAATGCCCCGAATGCCT

Bos
CTAAGCCTGCTTGGTTATTCCATTGCTATGCCATTGCAAATGCATATGCCCCGAATACCT
Sus CTAGGTCTGCTTTGCTATTCTGCTGCTATGCCA-----
ATGCAAATGCCCCGAATGCCT
Tursiops CTAGGTCTGCTTTGTTATTCCATAGCTATGCCA-----
ATGCAAATGCCCCGAATGCCT

Ornithorhynchus
GGATTTGGCAGTAAAAGCGAAGAGATGATGCCGTATGGTCAGTACAACCTTTATGAATTCA
Monodelphis
GGATTTGGCAGTAAAGAGTGAAGAGATGATGCGATATGGACAGTACAGCTTCATGAACATG
Mus_musculus
GGATTTAGCAGTAAAAGTGAAGAGATGATGCGATATAATCAATTCAACTTCATGAATGCC
Rattus
GGATTTAGCAGTAAAAGTGAAGAGATGATGCGATATAATCAATTCAATTTTATGAATGCC
Cavia
GGATTTAGCAGCAAAAAGTGAGGAGATGATGCGCTATGGCCAGTTCAACTATATGCATCCC
Homo
GGATTTAGCAGTAAAAGTGAAGAGATGATGCGGTATAATCAATTCAACTTTATGAACGGC
Equus
GGATTTAGCAGTAAAAGTGAAGAGATGATGCGGTACGGTCAATTCAACTTTATGAACTCA
Ursus
GGATTTAGCAGTAAAAGTGAAGAGATGATGCGATATGGTCAATTCAACTTTATGAACTCC
Bos
GGATTTAGCAGTAAAAGTGAAGAGATGATGCGCTATGGTCACTTCAACTTTATGAACTTC
Sus
GGATTTAGCAGTAAAAGTGAAGAGATGATGCGCTATGGTCACTTCAACTTTATGAACGCC
Tursiops
GGATTTAGCAGTAAAAGTGAAGAGCAGATGCGCTATGGTCACTTCAACTTTATGAACTCC

Ornithorhynchus CCACACATGGCACAGTTGGGCCCTTG-----
TATGGTTACGGCTTG-----
Monodelphis CCACACATGGCACACCTGGGTCCCTCG-----
TATGGATATAATATA-----
Mus_musculus CCACCAATGATGCCTATGGGCCCA-----
TATGGAAATGGTATGCCAATGCCGCCA
Rattus CCACCAATGATGCATATGGGCCCA-----
TGGCAAACGGTTTGCCGATGCCTCCG
Cavia
CCACCTATGGCACCTATGGGCCCTATGGGCCCTTACGGAAATGGTTAC-----
Homo CCACATATGGCACACCTGGGGCCCTTC-----
TTTGGAAACGGTCTC-----
Equus CCACATATGGCACAACTGGGCCCTATG-----
TATGGAAATGGCATG-----
Ursus CCACATATGGCACAGCTGGGCCCTTG-----
TACGGGAATGGTATG-----
Bos CCGCATTTGGCACACCTGAGTCCCTTT-----

TATGGAAATGGTATA-----
Sus CCACATATGGCACACCTGGGCACCTTG-----
TATGGAAATGGTATG-----
Tursiops CCACAGATGGTACACCTGGGTCCCTTG-----
TATGGAAATGGTATG-----

Ornithorhynchus CAGCTC---CCCCAGTTCTTCCAACCACCCAGATG---
CCTCCCTGGCCCCAGCCTCCC
Monodelphis CGGCTC---CCTCAGCAGTTTCCACAGATCCAGATG---
CCAGTGTGGCCCCAGCCACCG
Mus_musculus CACATG---CCTCCACAGTACCCTCCATACCAGATG---
CCCATGTGGCCTCCACCAGTA
Rattus CACATG---CCTCCGAGTACCCTCCATACCAGATG---
CCCATGTGGCCTCCGCCAGTC
Cavia CAAATT---
CCTCCGCCTTACCCACAGTACCCAATGCCCCCATGTGGCCCCATCCACTA
Homo -----CCTCAGCAATTTCCACAGTACCAGATG---
CCCATGTGGCCTCAGCCACCA
Equus CAACTCCCCCTCAGCTCTTCCCGCAGTACCAGATG---
CCCATGTGGCCACAGCCACCA
Ursus -----CCTCCGGTCTTCCCACAGTACCAGATG---
CCCATGTGGCCTCAACCGCCA
Bos CAGCTC---CCTCAGCTCTTCCCACAGTACCAGATG---
CCCATGTGGCCTCAGCCACCA
Sus CAGCTC---CCTCAGTTCTTCCCACAGTATCAGATG---
CCTATGTGGCCTCAGCCACCA
Tursiops CAGCTC---CCTCAGCTCTTCCCTGCCGTACCAGATG---
CCCATGTGGCCTCAGCCACCA

Ornithorhynchus
CCGAACGGGTGGCCAGCCCAGAACC CGGGGCCACCACAAGGAGGGAAGCCCCAG---GCC
Monodelphis CCAAATGCATGGCTCCCCAGAATCCCATGC---
CACCGAACTTACCAAGACCAC---AGA
Mus_musculus CCCAATGGATGG-----CAGCAA-----
CCCCAATGCCAATTTCCA---AGC
Rattus CCCAATGGATGG-----CAGCAA-----
CCCCAATGCCAATTTCCA---AGC
Cavia CCCAGTGGGTGG-----CAGAAC-----
CCCCAGTACCCCAACACCAG---ACC
Homo CCCAACACATGGCATCCACGGAAA-----
TCCTCAGCACCCAAACGTCAT---AAC
Equus GCCATCATGGGGCGCCCAAAGAAATCATCT---
CCCTCAACACAAAACCTCAG---AGC
Ursus
CCCAACATGGGCCACCTACAGAAATCCTCACCTCCTTCAGCACCCAAACGCCAAAAGAGC
Bos CCCAACAAAGAAAAGCCACAGAAG-----
CCTTCATCTCCCGCAGCACCC---AAA

Sus CCCAACAAGAAGCACCCACAGAAA-----
CCTTCAGCATCCAAACAGCAG---AGC
Tursiops
CCCAACAAGAAGCGCCCACAGAAACCTTCATCTCCCTCAGCACCCAAACACCAG---AGC

Ornithorhynchus
AAGCCCGGTCAGAGCCAGAACACCAAGCAGCCCAACCTTCCCAGCCCAAGAAACCA---
Monodelphis
AAGGCAGGGGAGGGCCAGGAAATCCCAAGGCCAGCCAGCCACTGCCAACGAAGCCA---
Mus_musculus
AAGACTGATCAAACCCAGGAGACCGCCAAACCCAACCAGACCAATCCACAAGAGCCACAG
Rattus
AAAACCTGAACAAACCCAGGAGACCGCCAAACCCAACCAGACCGATCCACAAGAGCCACAA
Cavia
AAGACGGATCAAACCCAGGAGACTCAGAAGCCCAACCAGACTCAGCCCCAGAAACCA---
Homo
AAGACTGATCAGACCCAAGAAACCCAGAAACCCAACCAGACTCAGTCAAAAAAGCCA---
Equus
AAGACTGATCAAGCCCCAGAGACCCCAATGCCCAACCAGACTCAACCAAAAAAGTCA---
Ursus
AAGACTGATCAAATCCCAGAGACTCAGAATCCCAACGAGCCTCAGCCAAAAAAGCCA---
Bos
CAGACAGATCAAGCCCCTGAGACCCCGAGTCCCAACCAGCCTCAACCAACCGACTCC---
Sus
AAAACCTGATCCAGCCCCAGAGAGCCAGAAACCCAACCAGCCTCAACCAAAAACCCCC---
Tursiops
AAGACTGATCAAGCCCCAGAGACCCAGAAACCCAACCAGCCTCAACTAAAACAGCCC---

Ornithorhynchus
CCGCAGCAGCAGCCTCCAAAGCAGGCCGCAAGCAGCCGGCCCCGGGCCCTCCAAGCCC
Monodelphis CCAACAACA-----
CAAAGCCACCTACAAAGCAGTCCCCAGAAGGCCCCCTCGGCCA
Mus_musculus CCA-----
CAAAGCAGCCTTTAAAGGAACCACCAAATGAAGCAGCAGGGCC
Rattus CCA-----
CAAAGCAGCCTTTAAAGGAACCACCAAATGAAGCAGCAGAGCC
Cavia CCA-----
GAAAAGCAGCCTTCCAATCAGCCACCAGAAAACCCGCCCAAGGAC
Homo CCA-----
CAAAGCGGCCTTTGAAGCAGCCATCACATAATCAACCTCAGCCC
Equus CCT-----
CCAAAGCAGCCTGCCAA-----ACTCAGGCC
Ursus CCA-----
CCAAAGCAGCCTTTAAAGCAGCCACCGCCTACCCCAGCACAGCCA
Bos CCA-----
CCAAACCAGCATTAAAGCAGCCATCAACCACCACAGCTCAGCCA
Sus ACG-----

CCAAAGCAGCCTTTAAACGAGCCGTCACCTACTCCAACCTCAGCCT
Tursiops CTA-----
CCGGAGCATCCTTTAAAGCAGCCATCACCCACCCAACTCAGCCC

Ornithorhynchus ---
ACGGAAGAGACCCGACAACCTCAAATGTACCCGCCGTTTCGGCAATGGATTCTTTCCC
Monodelphis ---
AAAGAAGAAGATCAACAGCCTCCACAATACCCGCCATTTGGCAATGGGATGTTTCCT
Mus_musculus ---
AAAGATGACGCCAGCCACCTCAGCCATTCCCACCATTTGGCAATGGACTTTACCCC
Rattus ---
AAAGATGAAGCCCAGCCACCTCAGCCATTCCCACCATTTGGCAATGGGCTTTACCCC
Cavia ---
AAGGCAGATGCCAGCCGCCACAGCCATTCCCACCATTCAACAATGGATTATTCCCC
Homo ---
GAAGAGGAAGCTCAACCCCTCAGGCATTCCCACCATTTGGAAATGGGCTATTCCCC
Equus ---
GAAGAGGAAGCCCAGCCACCTCAGGCATTCCCACCATTCGGCAATGGGCTATTTCCA
Ursus ---
GAAGAGGAAACCCAGCCACCTCAGGCATTCCCACCATTCGGCAATGGGCTATTTCCA
Bos
CAAGAGGAGGAAACCCAGACACCTCAGGCATTCCCACCATTCGGCAATGGGCTATTTCCC
Sus ---
GAAGAGGAAACCCAGACACCTCAGGCATTTCCACCATTCGGCAATGGGCTATTTCCC
Tursiops ---
CAAGAGGAAACCCAGACACCTCAGGCATTCCCACCATTTGGCAATGGGCTATTTCCC

Ornithorhynchus -----
TTCCAGCTGCAACCCCTGGCAAATTCCACCG-----
Monodelphis -----
TTTCATCAGCCACCCCTGGCATATTCCACAGTTTTATAATCCA
Mus_musculus -----
TATCCACAACCACCATGGCCAATTCCACAG-----
Rattus -----
TATCAACAACCACCATGGCCAATTCCACAG-----
Cavia -----
TTTCAACAACCACCATGGCCAATTCCACAG-----
Homo -----
TATCAACAACCACCATGGCAAATTCCACAG-----
Equus -----
TATCATCAGCCACCGTGGCAAGTTCCACAC-----
Ursus
CCATTAGCAATGGGCTCTATCAACAGCCACCCCTGGCAAGTTCCACAT-----
Bos -----
TATCAACAGCCACCGTGGCATATTCCACAT-----
Sus -----
TATCAACAGCCACTGTGGCATGTTCCACAT-----

Tursiops -----
TATCAACAGCTACCGTGGCATGTTCCACAA-----

Ornithorhynchus -----
CAAATG---CCCCCTGGCTAC
Monodelphis
GGAGGCTTTCCATCACCGCCAAACAACCCATTTTCATGGACGAATG---CCTCCAGGGTAT
Mus_musculus -----
AGGGGACCACCAACAGCGTTT
Rattus -----
ACAGGACCACCAACAGGGTTC
Cavia -----
AGGATGCCGCCCCCAGGTTAT
Homo -----
AGGTTACCACCACCAGGTTAT
Equus -----
AGGCTA---CCACCAGGTTAT
Ursus -----
AGGGTA---CCACCAGGTTAT
Bos -----
AAGATA---CCACCAGGTTTT
Sus -----
AGGATA---CCACCAGGCTAT
Tursiops -----
-----CCACCAGGTTAT

Ornithorhynchus
GGACGTCCACCAGGCAGCAACGAGGAAGGTGGAATCCATATTTTCGGCTACTTTGGCCAC
Monodelphis
GGACGTCCACCAGTCAGCAATGAGGAAGGAGGGAATCCTTATTTTGGCTATTTTGGATAT
Mus_musculus GGACGGCCAAAGTTCAGCAATGAAGAA---
GGAAATCCTTACTATGCATTTTTTGGATAT
Rattus GGACGACCCAAGTTCAGCAATGAAGAA---
GGAAATCCTTATTATGCATATTTTTGGATAT
Cavia
GGACGCCCACCACTCAGCAATGAAGACGGAGGGAATCCTTATTTTCGGATTTTTTGGATAT
Homo
GGACGCCCACCAATCAGCAATGAAGAAGGGGGAATCCTTACTTTGGATATTTTGGATAT
Equus
GGACGTCCACTAGGCAGCAATGAAGAAGGCGGGAATCCTTACTTTGGATATTTTCGGATAT
Ursus
GGACGTCCGCCAGGCAGCAATGAAGAAGGCGGGAATCCTTACTTTGGATATTTTGGATAT
Bos
GGACGTCCACCAGGTAGCAATGAAGAAGGTGGAACCCCTTCTTTGGATTTTTTGGATAT
Sus
GGACGTCCACCAACCAGCAATGAAGAAGGCGGGAATCCTTACTTTGGATTTTTTGGATAT
Tursiops

GGACGTCCACCAGTCAGCAATGAAGAAGGTGGGAATCCTTACTTTGGATATTTTGGATAT

Ornithorhynchus

CAGGGCTTTGGGGGCAGACCCCCGTACTACTCAGAAGAAATG-----

Monodelphis

CATGGATTTGGAGGGCGACCCCCATATTATTCAGAAGAGATGTTTGAACAAGACTTTGAA

Mus_musculus CACGGCTTTGGGGGTCGT---

CCTTATTACTCAGAAGAGATGTTTGAA---GATTATGAA

Rattus CACGGCTTTGGGGGCCGT---

CCTTATTACTCAGAAGAGATGTTTGAA---GATTATGAA

Cavia CCTGGCTTTGGAGGTCGT---

CCCTATTATTCAGAAGAGATGTTTGAA---GATTATGAA

Homo

CATGGCTTTGGGGGTCGCCCTCCTTATTATTCAGAAGAAATGTTTGAACAAGATTTTGAA

Equus

CATGGATTTGGGGGTCGTCCCTCCTTACTATTCAGAAGAGATGTTTGAA---GATTTTGAA

Ursus

CAGGGATTTGGGGGTCGTCCCTCCTTATTATTCAGAAGAGATGTTTGAACAAGATTTTGAA

Bos

CATGGATTTGGGGGCCGTCCCTCCTTATTATTCAGAAGAGATGTTTGAA---GATTTTGAA

Sus

CATGGATTTGGGGGCCGTCCCTCCTTATTACTCAGAGGAGATGTTTGAACAAGATTTTGAA

Tursiops

CATGGATTTGGGGGCCGTCCCTCCTTATTATTCAGAAGAGATGTTTGAACAAGATTTTGAA

Ornithorhynchus

AAGGAAGAAGAGAAGGAAAGCCCCAAGGAGGAC-----AGTCCCTCCCCT

Monodelphis

AAGCCCAAAGAGGAAGATCCCCCAAAGTAGAG-----AGTACCACCGCA

Mus_musculus

AAACCCAAAGAAAAAGACCCTCCTAAACCAGAGGACCCACCTCCAGATGACCCACCCCCA

Rattus

AAACCCAAAGAAAAAGATCCTCCTAAACCTGAGGACCCGCCCCAGATGACCCACCCCCA

Cavia

AAACCTAAGGAAGAAGATCCTCCTAAGCCAGAG-----GATCCACCATCA

Homo

AAACCCAAAGAAGAAGATCCTCCTAAAGCAGAA-----AGTCCAGGCACA

Equus

AAACCCAAAGAAGAAGATCCTCCTAAAGCAGAG-----AGTCCAGCCACT

Ursus

AAGCCCAAAGAAGAAGATCCTCCTAAAAAAGAG-----AGTCCAGCTGCT

Bos

AAACCCAAAAGAAGAAGATCCTCCTAAAACAGAG-----ACTCCAGCCACA

Sus

AAACCCAAAAGAAAAAGATCCTCCAAAACAGAG-----ACTCCAGCCACT

Tursiops

AAACCCAAAAGAAAAAGATCCTCCTAAAACAGAG-----AGTCCAGCCACT

Ornithorhynchus
 GAGCCTACGGCCAACCTCCACCGTTGCCGAGACCAACTCCACCCAGCCCAGTGGCCCGAGC
 Monodelphis
 GCCCTCCAACGAACCTCCACCGTTCCTGAGACCAATTCAACTCAAGCAACTGTCCCTGTG
 Mus_musculus
 GAGGCCTCTACAAACTCAACTGTGCCTGATGCTAATGCCACTCAATCAATT-----
 Rattus
 GAGGCCTCTACAAATTCAACAGTGCCTGATGCTAATGCCACTCAATCAATT-----
 Cavia
 GAACCTTCAGCTAATTCTACAGTTCCTGAGACTAATTCTACCCAATAACA-----
 Homo
 GAACCCACAGCTAATTCAACAGTCACTGAGACGAATTCTACCCAA-----CCAAAT
 Equus
 GAACCCTCGTCTAATTCAACAGTTCCTGAAAATAATTCCACCCAACCAAATGCACCCAAC
 Ursus
 GAGCCCTCGGGTAATTCTACAGTTCCTGAGACTAATTCTACTCAGTCAAATGCACCCATC
 Bos
 GATCCTTCTGTTAATTCAACAGTTCCTGAGACTAATTCTACCCAGCCAGGTGCACCCAGT
 Sus
 GAACCTTCAGTTAATACAACAGTTCCTGAGACAAATTCTACCCAGCCAAACGCACCCAAT
 Tursiops
 GATCCTTCGGTTAATTCAACAGTTCCTGAAACTAATTCTACCCAGTCAAATGCACCCAAT

Ornithorhynchus
 CAGGCCGGGAGTCAGGGGGGAAACGCCACCGACCCTGGTCAGTCGGCGGGGAACGGATCT
 Monodelphis TCAGGAGGGAGTCAAGGTGGAAATGAGACCAGCACA-----
 ACAGGGAATGAAGCT
 Mus_musculus CCT-----GAAGGCGGAAATGACACTAGCCCA-----
 ATAGGAAACACAGGC
 Rattus CCTGGAGGGGGTCAAGGTGGAAATGACTCTAGCCCA-----
 GTAGGAAACACAGGC
 Cavia -----AATCAAGGCAAAAATGACACCGGTCCA-----
 AACTAAACAGTATT
 Homo CCTAAAGGGAGTCAGGGAGGAAATGACACCAGCCCC-----
 ACAGGAAACAGTACC
 Equus CCCAGAGGCAGTCAGGGTGGAAATGACACCAGCCCA-----
 ACAGGAAACAGTGGC
 Ursus CCTGGAGGAAGTCAGGGTGGAAATGACACCAGCCCA-----
 ACAGGC-----
 Bos CCCAGAGCGGGTCAAGGCGGAAATGACACCAGCCCA-----
 GCAGGAAACAATGGT
 Sus CCCCAG-----GGAAATGACACCAGCCCA-----
 ACAGGAACCAGTGGC
 Tursiops CCCAGAGGGAGTCAAGGTGGAAATGACACCAGCCCA-----
 ACAGGAAACAGTGTC

Ornithorhynchus
CCCCCCAGACTCCCAGGACGGCACGGTTCCCGATAACGGTGAGCCCCGGGTCCGCTC
Monodelphis GAAGTGCAGAACCCT-----
GGGATCAACTTGGCTCCTGCT
Mus_musculus
CCTGGGCCGAACGCTGGGAACAATCCTACAGTTCAAAACGGTGTCTTCCCTCCCCCTAAA
Rattus
CCTGGGCCTAATGCTGGGAACAATCCTACAGTTCATAATGGTGTCTTCCCTCTCCCTAAA
Cavia
CCTGGGCTGAATACTGGCAACAACCCTACAGTTCAAAATGGGATCTTCCCACTCCCTACA
Homo
CCAGGACTAAACACTGGGAACAACCCTCCAGCTCAAAAATGGGATTGGCCCACTCCCTGCA
Equus
TATGGGCCAAACACTGTGAGCAACCGTACAGTTCAAAATGGGGTCATCTACCCCTACA
Ursus -----CCAAACATG-----
GCTCAAAAACGGGGTTAACTCATCCCCCTACC
Bos
CAGGACCCTAACACTGTGAGCAACCCTACAGTTCAAAACAAC-----CCTGTA
Sus
CAGGGCCCTAACCTAGAAAGCAACCCTACAGGTCAAAAACGGC-----CCTGCA
Tursiops
CAGGGGTCTAACACTGTGAGCAATCCTACAGCTCAAAAACAGC-----CCTGCA

Ornithorhynchus
CTCAATGCCTCCGACCAGGGGGAGCGAGAGGTCCGAAGCCCACGGGCCCGGGCCCCGGC
Monodelphis
GTTAATGTCTCTGGCCAAGACGGACCAGGAAGTCAGGTTCCT-----CCTGGCCCATAT
Mus_musculus
GTTAATGTTTCAGGCCAGGGAGTACCAAAAAGCCAAATTCCT-----TGGAGACCAAGT
Rattus
GTTAATGTTTCAGGCCAGGGAGTACCGAAAACCAATTCCT-----TGGAGACCAAGT
Cavia
GTTAATTTTTTCAGGCCAAGTAATACCCGGAAGTCAAATTCCT-----TGGAAACCAAT
Homo
GTCAACGCTTCAGGCCAGGGAGGGCCAGGAAGTCAAATTCCT-----TGGAGACCAAGT
Equus
GTTAATATTTTCAGGCCAGGGAATACCAAGACGTCAAATTCCT-----TGGAGACCAAGT
Ursus
GTTAATGTTTCAGGTTCAGGCAGTACCAAGAACTCAAATCATG-----TGGGGACCAAGT
Bos
GTAAATGTTTCCGGCCAAGGAGTTCCAAGAAGTCAAACCCCG-----TGGAGACCAAGT
Sus
GTTAATGTTTCAGGCCAGGGAGTTCCAAGAAGTCAAAGCCCA-----TGGGGACCAAGG
Tursiops
GTAAATGTTTTCAGGCCAGGGAGTTCCAAGAAGTCAAACCCCA-----CAGGGACCAAGT

Ornithorhynchus

CAGCCGCCTTCCGGGGCCGCCCCGCCAACCCCAATGCGGCTCCAGGGTTCCCCGCGGGC
 Monodelphis CAGCCAACTATTCTTGAAAACCTCCAAATCCTAATTTAAGA---
 GGCTTTCCATAAGC
 Mus_musculus CAGCCAAATATTTATGAGAATTATCCTTACCCA-----
 AATTATCCTTCAGAA
 Rattus CAGCCAAATATTTATGAAAATTATCCTTATCCA-----
 AATTATCCTTCAGAA
 Cavia CAGCCCAATATTTATGGAAGTTATCCAAAACCTAACATCAGA---
 AATTCTCCTTCAGGA
 Homo CAGCCAAATATTCGTGAAAATCATCCATATCCTAATATAAGA---
 AATTTTCCTTCAGGA
 Equus CAGCCAAAGATTCATGAAAATTACCCAAATCCTAACATCCGA---
 AATTTTCCTGCAAGA
 Ursus CAGCCAAATATTCATGAAAATTATCCAAATCCTAACACCGA---
 AATTTTCCTGTAGGG
 Bos CAGACAAATATTCATGAAAATTATCCATATCCTAACATTCGA---
 AATTTTCCTGCAGGA
 Sus CAGACAATTATTCATGAAAATTATCCAAATCCTAACATCCGA---
 GGTTTCCTGCAAGA
 Tursiops CAGACAAATATTCATGAAAATTATCCAAATCCTAACATCCGT---
 AGTTTCCTGCAGGA

Ornithorhynchus
 CGACAGCGCCGCCCTTTCGTCCATCCCTTCGGCCGCCCTTCGACCGGCCCGTTCGGCCGC
 Monodelphis AGACAATGG-----
 AGTCAAACAAGCTTC
 Mus_musculus AGACAATGG-----
 CAAACCACTGGTACC
 Rattus AGACAATGG-----
 CAAACCACTGATACC
 Cavia AGACAATCA-----
 AATCCCACACATACT
 Homo AGACAGTGG-----
 TATTTCACTGGTACT
 Equus AGACAATGG-----
 CGTCCCCTGGTACC
 Ursus AGGCAATGG-----
 CGTCCCCTGGTACT
 Bos AGACAATGG-----
 CATCCTACTGGTACC
 Sus AGACAATGG-----
 CGTCCTCCTGGTCCT
 Tursiops AGACAATGG-----
 CGACCTACTGGCACC

Ornithorhynchus
 CCCGTCGGCCGAAGGGATCACGGTCCCACCTACGGGAATACGCCCAAGGCCAGGGGCCCC

Monodelphis
CCTGTAGGACCTAGACTGATGGGCCCTTTTTATAGAAATTATCCCAATCAAAGGAGCTAC
Mus_musculus ---
CAGGGCCTAGACAGAATGGACCTGGCTACCGAAATCCACAAGTTGAAAGGGGTCTT
Rattus ---
CAGGGCCTAAACAGAACGGACCTGGTTACCAAATCCACAATCAAAGGGGTCTT
Cavia
GCCACTGGGCAGAGACCACCTGGACCTTCTTACCGGAACCAACCAGGTCAATGGGATGCT
Homo
GTCATGGGGCACAGACAGAATAGGCCTTTTTACAGAAATCAACAAGTTCAAAGGGGTCTT
Equus GCCACAGGGAATAGACAGAATGGGCCTTTCTACCGAAAT---
CAAGTTCAAAGGGATCCT
Ursus
ATCATGGGGCACAGACAGAATGGGCCTTTTTACCGAAATCAACAGTTTCAACGGGGTCTT
Bos
TCTATGGGGAACAGACGTAATGGGCCTTTTTACCGAAATCAACAAATCAAAGGGTCTCT
Sus
GCTATGGGGCACAGGCGTAATGGGCCTTTTTACCGAAATCAACAAATCAAAGGGGTCTT
Tursiops
GCTACGGGGCACAACGTAATGGGCCTTTTTACCGAAATCAACAAATCAAAGGGGTCCC

Ornithorhynchus CTCCGATGGAACGCAGTCACCTCTGAAGGCAAACGGGTC---
GCCCGTCCCGGATATCCC
Monodelphis ---CAATGGCCCAGTTTAGCTTATGTAAGCAAGCAAATA---
GTTTCGCCAGGAAACACA
Mus_musculus ---CAGTGGAATTCCTTTGCTTGGGAAGGCAAACAAGCT---
ACTCGTCCAGGAAACCCA
Rattus ---
CAGTGGAATTCCTTTGCTTGGGAAGGCAAACAAGCTACTACTCATCCAGGAAATCCA
Cavia ---CAGGGGAACTCCTTCGCTTGGGAAGGCAAACAAGCA---
GCTGGGCCCAAAAATCCA
Homo ---CGGTGGAACTTCTTTGCTTGGGAACGTAAACAAGTA---
GCTCGTCCAGGAAATCCA
Equus ---CAGTGGAACTCCTTTGCTTGGGAGGGCAAACGAACA---
GTTTCATCCAGGAAATCCA
Ursus ---CGGTGGAACTCCTTTGCTTTGGAACGCAAACAAGCA---
GTTTCGTCCAGGAAATCCA
Bos ---CGGTGGAACTCCTTTGTTTTGGAAGGCAAACAAGCA---
ATTCGTCTAGGATATCCA
Sus ---CGGTGGAACTCTTTTACTTTGGAAGGCAAACAAGCA---
GTTTCGTCCAGGATATCCA
Tursiops ---CGGTGGAACTCCTTTGTTTTGGAAGGCAAACAAGCA---
GTTTCGCCAGGATATCCA

Ornithorhynchus
ATGTACCGCAGGCCTTTCCCCGTCGCCGCCCCGGGAGGGGTTTCCCCAACCGGGCGGGG
Monodelphis GCTTACCAAAAAGTTTATCCTTACATTTCTAAGAGCAAT---

TCTCCTAATCATGTATCT
Mus_musculus
ACTTACGGTAAACCTCCCTCTCCTACCTCCGGGGTT-----AATTATGCAGGA
Rattus ACTTACCACAAACCTTCCCCTCCTACCTCAAGAGTTAAT---
TATCCCAACTATGCAGGA
Cavia ACTTATCACAAAGCTTACACTCCCACCTTCCAGAAAGAAT---
TACCCAGTTATGCAGGA
Homo GTTTATCACAAAGCTTACCCTCCTACTTCAAGAGGCAAT---
TATCCCAATTATGCAGGA
Equus ATTTATCGCAAATCTTATACTCCCCTACAAGAGGCAAT---
TCTCCCAATAATGCAGGA
Ursus ATTTATCGCAAGGCTTATGCTTCTACTGCAAGAGGGAAT---
TCTCCCAATCATGCAGGA
Bos ATATATCGCAGAGCTTATGCCTCCACCGTAAGGGGCAAT---
TATCCCAATTATGCAGGA
Sus ACATATCGCAGAGTTTATGGTTCTACTGCAAGAAGTAAT---
CCCCCAATTATGCAGGA
Tursiops ATATACCGCAGAGCTTATGCTTCCACTGCAAGAGGCAAC---
TCTCCCAATTATGCAGGA

Ornithorhynchus
AATCCCCTCAATCTCCGGAAGAACCCCCAGGCCCA-----
Monodelphis
AATCCAGCAAATAACAGAAGAAAACCCCAGGGTCCA-----
Mus_musculus
AATCCAGTCCATTTTCGGAAGAAACCTGCCAGGGCCAAATAAACCCTTTGTGGGAGCCAAT
Rattus
AATCCAGTCAATTTTCGGAAGAAAACCTGCCAGGGCCAAAAAACCCTTTATGGGAGCCAAT
Cavia
AATCCAGCAAATTTTCAGAAGAAAGCTTCAAGGGCCA-----
Homo
AATCCAGCAAATCTCAGAAGAAAGCCTCAGGGGCCA-----
Equus
AATCCAGCAAATATCAGAAGAAAGCCTCAGGGGCCG-----
Ursus
AATCTGGGCAATTTTCAGAAGAAAGCCTCAGGGACCA-----
Bos
AATCCAGTAAATTTTCAGAAGAAAGCCTGAGGGGCC-----
Sus
AATTCAGCGAATCTCAGAAGAAAGCCTGAGGGGCCA-----
Tursiops
AATCCAGCAAATTTTCAGAAGAAAGCCTGAAGGGCCA-----

Ornithorhynchus

Monodelphis

Mus_musculus

CCGGCCTCAAATAAACCCCTTTGTGGGAGCCAATCCGGCCTCAAACAAACCCTTTGTGGGA

Rattus

CCAGCTTCAAACAAACCCTTTGTGGGAGCCAATCCAGCTTCAAACAAACCCTTTGTGGGA

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Ornithorhynchus

Monodelphis

Mus_musculus

GCTAATCCGGCCTCAAACAAACCCTTTGTGGGAGCCAATCCGGCCTCAAATAAACCCCTTT

Rattus

ACCAATCCAGCCTCAAACAAACCCTTTGTGGGAGCCAATCCAGCCTCAAACAAACCCTTT

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Ornithorhynchus

Monodelphis

Mus_musculus

GTGGGAGCCAATCCGGCCTCAAATAAACCTATGTGGGAGCCAATCCGGCCTCAAACAAA

Rattus

GTGGGAGCCAATCCAGCCTCAAACAAACCCTTTGTGGGAGCCAATCCAGCCTCAAACAAA

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Ornithorhynchus

Monodelphis

Mus_musculus

CCCTTTATAGGAGCCAATCCGGCTGCAAACAAACCATCTATAGGAACCAATCCAGCCGCA

Rattus

CCCTTTGTGGGAGCCAACCCAGCCTCAAACAAACCCTTTATGGGCACCAATCCTGCTGCA

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Ornithorhynchus

Monodelphis

Mus_musculus

AACAAACCATCTATAGGAACCAATCCAGCTGCAAATAAACCTTTGTGAGAAACAATGTA

Rattus
AATAAACCATCTATAGGAACCAATGCAGCCTCAAACAAACCATTTGTGGGAACCAATGCA
Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Ornithorhynchus

Monodelphis

Mus_musculus

GGT-----

Rattus

GGTACAAATAAACCGTTTATGGGAATCAATGTTGCCTCAAATAAACCTTTATGGGAACC

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Ornithorhynchus

Monodelphis

Mus_musculus

GCAAATAAACCTTTGTGGGAACCAATCCCTCCTCAAACCAACCATTTCTG

Rattus

AATCCGGCCTCAAATAAACCCCTTTGTGGGAACCAATCCAGCCTCAAATAAACCATTTGTG
Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Ornithorhynchus

-----GCCAAGCAC

Monodelphis

-----ACCAAACAA

Mus_musculus

AGAAGCAATCAGGCCTCAAATAAACCATTTATGAGAAGCAATCAGGCCTCAAATAAACCA

Rattus

AGAAGCAATCATGCCTCAAATAAACCATTTGTAGGAGCCAATGCTGCTTCAAATAAACCA

Cavia

-----AACAAACCT

Homo

-----AATAAACAC

Equus

-----AATAAACCT

Ursus

-----AATAAACAC

Bos

-----AGTAAACAA

Sus

-----AATAAGAAC

Tursiops

-----AATAAACAC

Ornithorhynchus

CCCGGAGAGGCCAACAGCGGGCCGGTGTATTCCCAGCGCGGGCTCATGGCCCCAGG

Monodelphis

CCTGAAGAAATAAATGGTGGGTTAGCA---

GGTCCCAAGCTTGGCACTGCCATAAAGAG

Mus_musculus

TTTGTGGGCACCAATGTGGCCTCAGTG---

GGTCCTAAACAGGTCAGTGTAGCCACAAT

Rattus

TTTGTGGGAACCAATGTGCCCTCAGTG---

GGTCCTAAACAGGTTACTGTTAGCCACAAT

Cavia TTTGTGGGGACCAATGTTACCCCAATG---
AGTCCCAAACAAGGTACTATTGGCCGCAAT
Homo CCTGTAGGAACTACTGTTGCCCACTG---
GGTCCCAAACCTGGCCCTGTTGTTTCGCAAT
Equus CCTGTGGTAACCAATGTT---CCTCTG---
GGTCCCAAACATGATACTGTTGACCTCAAC
Ursus CCTGTGGGAACCAATGTTGCTCCTCTG---
AGTCCCAAACAGGGTACGGTTGTCCACAAT
Bos CCTGAGGGAACT---ATTGCCCTCTG---
GGTCCCAAACATGGTACTACTGGCCACAAT
Sus CCTATGGTAACCAATGTTGCTCCTCCA---
GGTCCCAAACATGGTACTGTTGACCAAAAT
Tursiops CCTGTGGGAACCAATGTTGCCCTCTG---
GGTCCCAAACATGGTACTGTTGGCCACAAT

Ornithorhynchus
GAGCCAGTCGCATCCCCTCAGGAAAACCCACCGAGCCCAAGGGAGAAACCGTCCTTCCCG
Monodelphis
GAGCAGATTCAAACCCCAAAGAGAATTCAGTAACCCAGAGAGAAAGAATAACCTTTCCT
Mus_musculus
ATGAAAACCTCAAATCCAAAAGAAAAGTCACTAGGTCAAAAAGAAAGAACAGTCACTCCT
Rattus
ATGAAAACCCAAAATCCAAAGGAAAAGTCACTAGGTCAAAAAGAAAGAACAGTCACTCCT
Cavia
GAAAAGATCCAAAATCCAAAGGAAAAGTCCCTAGGTCAAAAAGAAAGCACAAATTAATCCT
Homo
GAAAAAATCCAAAATCCAAAGGAGAAGCCCCTGGGTCCAAAAGAACAATAATAGTTCCT
Equus
GAAAAGTCCAAAACCCGAGAGAGAAGCCACCTGATCAAAAAGAA---ATAGTCATTCCT
Ursus
GAAAAAATCCAAAATCCAGGAGAGAAACCAGTAGGTCCAAAAGAAAGAATAGTCATTCCT
Bos
GAAAACATCCAAAATCCAAAAGAGAAGCCAGTAAGTCAAAAAGAAAGAATAGTCATTCCT
Sus
GAAAACATCCAAAATCCAAAGAGAGAAGCAAGTAAGTCAAAAAGAAAGAACAGTCGTTCCT
Tursiops
GAAAACATCCAAAATCCAAAGAGAGAAGCCAGTAAGTCAAAAAGAAAGGAATAGTCATTCCT

Ornithorhynchus
ACCCGGGGTCCGGCCGTCCCCTGGAGGAAACCTCAGAATTACGGCCCGGGGAAGCCAGTT
Monodelphis
ACAAGGGATCCAACCAGCACCTGGAGAACTCACAAGGTTATGAAACCAACAAATCAAAT
Mus_musculus
ACCAAAGATGCAAGCAACCCCTGGAGAAGTGCTAAACAATATGGAATTAACAATCCAAAC
Rattus
ACCAAAGATACAGGCAACCCCTGGAGAAGCTCTAAACAATATGGAATTAACAATCCAAAC
Cavia

ACAAAGGGTATGTCAGGCTCCTGGAGAAATTCACAATATCCTGGAGTTAATAAACCAAAT
Homo
ACAAAGAATCCAACCAGCCCCTGGAGAACTCTCAACAGTATGAAGTTAATAAATCAAAT
Equus
ACAAGGGATCCACCTGGCCCCTGGAGAACTCTGAAGACTATGGAATTAACAAACCAAAT
Ursus
ACAAGGGATCCATCTGGCCCCTGGAAAACTCTCAAGATTATGGAGTTAATAAATCAAAC
Bos
ACAAGGGATCCAAATGGCCCCTGGAGAACTCTCAAGACTATGGAGTTACTAAATCAAAC
Sus
ACAAGGGATCCAAGTGGCCCCTGGAGAACTCTCAAGACTATGGGATTAATAAATCAAAC
Tursiops
ACAAGGGATCCAAGTGGCCCCTGGAGAACTCTCAAGACTATGGAGTTAATAAATCAAAC

Ornithorhynchus
TACCGGCCCTCTCTCTGAGGGCAGACCTGCGGACCCGGGACCGAGTCCCTTCGACCCA
Monodelphis
TATAAATTAACCTCCACAGGGCAGCCCTTCAGTACCAAGTGTCAATTCTGTTGACCAG
Mus_musculus
TATAATTTGCCTCGCTCTGAGGGCAGCATGGTAGGCCCAAATTTTAATTCCTTTGATCAA
Rattus
TATAATTTGCCTCACCTGAGGGTAGCATGGTAGGCCCAAATTTTAATTCCTTTGATCAA
Cavia
TATGGGTGGCCTCATCCAGAGGATAACATGCTAGGCCCAAATTTTAATTCCTGTTAATCAA
Homo
TATAAACTGCCTCACTCTGAGGGTTATATGCCAGTCCCAAATTTTAATTCCTGTTGATCAA
Equus
TATAAACTGCCTCACTCTGAAGGTAACATACTAGTCCCAAATTTTAATTCCTGTTGATCAA
Ursus
TATAAACTGCCTCACCTGAGAGTAACATGCTAGTCCCAAGTTTTTAATTCCTATTGATCAA
Bos
TATAAACTGCCTCACCTGAGGGTAACATTCTAGTCCCAAATTTTAATTCCTATAGATCAA
Sus
TATAAACTGCCTCAGCCGGAGGATAACATGCTAGTCCCAAATTTTAATTCCTATTGATCAA
Tursiops
TATAAACTGCCTCACCTGAGGACAACATGCTAGTCCCAAATTTTAATTCCTATTGGTCAA

Ornithorhynchus
CGCGAAAACCCCTACTACCCAAGAGGAGATGCCACCGATAGAAGATTTCTGTCTTCGGGA
Monodelphis CCTGAAAAT---TATTACCCAGGGTAGATTCC-----
AGGAGATTCCAGCTAGT---
Mus_musculus CAAGAAAACCTACTTCTCAAAGGAGCTTCC-----
AAAAGAGTACCAAGTCCTAAT
Rattus CAAGAAAACCTACTTCTCAAGAGGAGATTCC-----
AGAAAAGTAGCAAGTCCTAAT
Cavia TATGAAAATTCCTATTACCCAAGAGGAGAAGTC-----
ATAAAAGTGCCAAGTTCCAAT

Homo CATGAAAACCTCCTATTACCCAAGAGGAGATTCC-----
AGAAAAGTCCCAAATTCTGAT
Equus CGTGAAAACCTCTTACTACCCAAGAGGAGATATC-----
ATAAGAGCCCCAAATTATGAT
Ursus CATGAAAACCTCTTATTACCCAAGAGGAGATTCC-----
AGAAGAGCCCCAAATTCTGAT
Bos CATGAAAACCTCTTATTACCCAGAGGAGATTCC-----
AGAGGAACCCCAAATTCTAAT
Sus CGTGAAAACCTCTTATTACCCAAGAGGGGAGTCC-----
AAAAGAGCCCCAAATTCTGAT
Tursiops CGTGAAAACCTCTTATTACCTGAGAGGAGATTCC-----
AGAAGAGCTCCAAATTCTAAT

Ornithorhynchus
GGCTCGGCCCTGGCCGCCATTTCCCCGAGGGTATTGTTTTGAAGCCA-----
Monodelphis -----
ATTCAAGCATCAAATTTTCCCAAAGGAATAGTTTCAGAACCAAGAAAAGGTCCC
Mus_musculus
ATACAAATCCAAAGCCAGAATTTGCCCAAAGGAATTGCTTTAGAGCCAAGAAGAACCCCA
Rattus
AGACAAATCCAAAGTCAGAATTTGCCCAAAGGAATTGCTTTAGAGCCAAGAAGAACCCCA
Cavia
GCAAAAACCCAAAGTCAGAACTTTCCCAAAGGGTTGCTTTAGAGCCA AAAAGAATTCCA
Homo
GGACAAACCCAAAGCCAGAATTTGCCCAAAGGGATTGTTTTAGGGTCAAGAAGGATGCCA
Equus
GGACAAACTCAAAGCCAGAATTTGCCCAAAGGGATTATTTTAGAGCCAAGAAGAATCCCA
Ursus
GGACAAACCCAAACCAGAATTTGCCCAAAGGGATTATTTTGGAGCCAAGAAGAAACCCA
Bos
GGACAAACCCAAAGCCAGAATTTGCCCAAAGGGATTATTTTAGAACCAAGAAGAATTCCA
Sus
GGACAAACCCAAACCAGATTATTTCCCAAAGGGATTGTTTTAGAGCCAAGAAGAATCCCA
Tursiops
GGACAAACCCAAAGCCAGAATTTGCTCAAAGGGATTATTTTAGAGCCAAGAAGAATCCCA

Ornithorhynchus -----
GAAGACGACCAGCCGCCATCGAAGCAGAAGCCTTTCCATCCC---GTCACT
Monodelphis
TCTGACTCTGAAATTAATCCACCAGAAATAAAACATGGAACCCACCAG-----
Mus_musculus
TTTCAATCAGAAACTAAAAACCTGAGTTAAAACATGGTACACACCAGCCT---GCATAC
Rattus
TTTGAATCAGAAACTAAAAGACCTGAATTAAAGCATAGTACAAACATGCCT---GTGTAC
Cavia
TATGAATCACAAACTATGCAGCCTGAATTAAAGCACAGTACACACCAGCCC---ATCTAT
Homo

TATGAATCAGAACTAATCAGTCAGAAATTAAGCACAGCTCATATCAGCCTGCTGTATAC
Equus
TATGAATCAGAACTAACCAGCCAGAATTAAGCACAGTACATATCAGCCT---GTATAT
Ursus
TATGAATCAGAACTAATCAGCCGGAATTAAGCACAGTACATATCAACCT---GTATAC
Bos
TATGAATCAGAAATTAATCAGCCAGAAATTAAGCACAGTACACATCAGCCT---GTGTAC
Sus
TATGAATCAGAGACTAATCAGCCAGAAATTAAGCACAGTGCCTATCAGCCT---GTGTAC
Tursiops
TATGAGTCAGAAATTAATCAGCCAGAAATTAAGCACAGCATATATCAGCCT---GTGTAC

Ornithorhynchus TCGGAGCGGACCCCG-----AGAGAGCCCAGTCCCACG---
AAGCCCCAGCGGACC

Monodelphis
ACTGATGAAGGTCCATATCCTCCAAAAGAATCCTTTTTTCTGAGAAGCAATACATGGAAT
Mus_musculus
CCTAAGAAAATCCCTTCTCCTACAAGAAAACATTTCCCTGCTGAAAGAAATACCTGGAAT
Rattus
CCTAAGAAAACCCTTCTCCTACAAGAGGACATTTCCCTGCTGGAAGAAATAACTGGAAT
Cavia
CCTGAGGTAATCCCTTCTCCAAAAGAGAACATTTTCCCTGCTGGAAGAAATACTTGGAGT
Homo
CCTGAGGAAATCCCTTCTCCTGCAAAAGAACATTTTCCCTGCTGGAAGAAATACTTGGGAC
Equus
CCCAGGAAACCCTTCCCCTGCAAGAGAACATTTTCCCCTGAAAGAAATACTTGGAAC
Ursus
CAAGAGGAAATCCTTCCCCTGCAAGAGAACATTTTCCCTGCTGGAAGAAATACTTGGAAAT
Bos
CCTGAGGGATCTCCTTCCCCTGCAAGGGAACGTTTTTCCCTGCTGGAAGAAATACTTGGAAC
Sus
ACTGAGGGAATCCCTTCCCCTGCAAGGAACATTTTCCCTGCTGGAAGAAATACTTGGAAAT
Tursiops
CCTGAGGGATTTCCCTTCCCCTGCAAGGGAACATTTTAATGCTGGAAGAAATACTTGGAAC

Ornithorhynchus
AGCCCGGAACCACCCCGCCCTAGAAGAAGGCCCTGGGCGGCAGGACAAGAGCCTGACG
Monodelphis
CTCCAAAAGGATCTCCAATTTTTGAGGATGAACCTACAAAACAGGAAGGATCTTTACTC
Mus_musculus
CGTCAAAAATCCTTCCACCCTTAAAGGAAGACTATGGGAGGCAAGACGAAAATTTACGT
Rattus
CACCAAAAACCCTTCCGCCCTTAAAAGAAGGCCATGGGAGGAAAGAAGAAAATTTACGT
Cavia
CACACGAAATCCCTCCACCCTTTAAAGAAGATCCTGGAAAGCAGGACAAACATTTACCT
Homo
CACCAAGAAATCTCTCCACCCTTTAAAGGAAGATCCAGGGAGGCAAGAAGAACATTTACCC

Equus
CACCAAGAAATCTCTCCACATTTTAAAGGAAGATCCTGGGAGGCAGGAAGAACAACACTTACCT
Ursus
CACCAAGAAATCTCTCCATCTTTTAAAGGAAGATCCTGGGAGGCAGGAGGAACAACACTTACCT
Bos
CAACAAGAAATCTCTCCACCTTTTAAAGGAAGATCCTGGAAGGAAGGAAGAACAACACTTACCT
Sus
CAACAAGAAATCTCTCCACCTTTTAAAGAAGATCCTGGGAGGCAGGAAGAACAACACTTACCT
Tursiops
CAACAAGAAATCTCTCCACCTTTTAAAGGAAGATCCTGGAAGGCATGAAGAACAACACTTACCT

Ornithorhynchus
TACCCACCCATCAGCCCTAGGAGCGGAATTCCCTATCCTGATCAT-----CATCCC
Monodelphis
TATCCAGCCCTTGGAGCAAGAGAAAATGTTCCCTACCCTGAATAC-----GTGCCC
Mus_musculus
CATCCGTCCTATGGCTCTAGAGGAAATATTTTTTACCATGAATAT-----ACCAAT
Rattus
CATCCTCCCTATGGCTCTAGAGGAAATGTTTTTTACCATGAATAT-----AACAAAT
Cavia
CATGTTTCCCCGGGCTCTCAAGATAGTGTTTTCTACCATAAATAT-----AACTCC
Homo
CATCCTTCCCATGGTTCTAGAGGAAGTGTTTTCTACCCTGAATAT-----AACCCA
Equus
CACCTTCCCTTGGCTCTAGAGGAGGTGTCTACTACCCTGACTAT-----TACCCC
Ursus
CATCCTTCTCATGGCTCTAGGGGAGGTGTTTACTATCCCGACTCTTACTACCCTAACTCT
Bos
CATCCTTCCCTTGGCTCTAGAGGACGTATTTACTACACTGACTAC-----AACCCC
Sus
CATCTTTCTCATGGCTCTAGAGTACATGTTTACTACCCTGACTAT-----AATCCC
Tursiops
CATCCTTCCCATGGCTCTGGAGGACGTGTTTATTACCCTGACTAT-----AACCCC

Ornithorhynchus TACGACCCCAA-----
GGGACCTGGGACGAAGGCAACGAG
Monodelphis
TATGATCCCAGAGGAGCTCTCTTTATGCCAGAGGTAATATGTGGGATGAAGGAGATGAG
Mus_musculus
CCTTATCATAATGAAAAATCACAGTACATTTAAAGCAATCCATGGGATAAG-----AGC
Rattus
CCTTATCCTAATGAGAAATCACCGTACCTTAGAGGCAATACATGGGATAAGAGGATCAGC
Cavia
TTTTACACCAGGGAAAATTCACCATACACTGGGAGCAACACATGGGAGAAGAGAGCTGAT
Homo
TATGATCCCAGGGAAAATTCACCATACTTAGAGGCAATACATGGGATGAGAGAGATGAT
Equus

TATGATCCCAGGGAAAACCTCACCATACTTTAGAGGCAATGCATGGGATGAGAGAAATTAT
Ursus
TATGATCCCAGGGAAAACCTCACCCTAGGCAATACGTGGGATGAAAGAGATGAT
Bos
TATGACCGCAGGGAAAACCCACCATAACCTTAGAAGTAATAGCTGGGATGAAAGAAATGAT
Sus
TATGATCCTAGGGAAAATTCACCATAACCTTAGAAGCAATACATGGTATGAAAGAGATGAT
Tursiops
TATGATCCCAGGGAAAACCTCACCATAACCTTAGAAGTAATACATGGGCTGAAAGAGATGAT

Ornithorhynchus
CCAACCTCCTTCCTCGGGCCCAGCGGAGCAACCAGGGAGACAACCGTCTCCCTGTAGCCCT
Monodelphis
TTTCCTGGCACTTTCAGACCAGCAGGTCAACCAGGAAATCCATTGCACTCCCTGAATTCT
Mus_musculus TCTCCCAGTACTATGATG-----
CGGCCAGAAAACCCACAGTACACCATGACTTCT
Rattus ACTCCCGGTACTATGATG-----
CAACCAGAAAATCCACAGTATAACCATGTCTTCT
Cavia TCTCCCAAACA-----
CAAGCAAAACTCCACAGTATCCTCTGAAGAAT
Homo TCTCCCAATACTATGGGG-----
CAAAAAGAAAGTCCACTCTACCCCATAAATACC
Equus TCTCCCAATACTATGGGG-----
CGACTCAAAAATCCACTGTACCCCGTGAATACT
Ursus TCTCCCAATAATATAGGG-----
CAACCCAAAATTCGCTGTACCCTATAAATACT
Bos CCTCCCAATACAATGGGG-----
CAATCTGAAAATCCACACTATCCCATGAATACT
Sus TCTCCCAATACCATGGGG-----
CAACCTGAAAATCCACACTACCCCATGAATACT
Tursiops TCTCCCAATGCAATGAGG-----
CAACCTGAAAATCCACACTATCCCATGAATACT

Ornithorhynchus
CGGATGGGCCAGAGAGGTGAAGTGCCCTACAACGAAGAGGACCCTGTTGACCCACGGGA
Monodelphis
CCTTCAGGTCAGAGACATCGGTCAACTGACAATGAAGAGGATCCAATTGACCCAACGGGT
Mus_musculus CTAGAC---
CAGAAGGAGACAGAGCAGTACAATGAAGAGGATCCAATTGATCCAATGAA
Rattus CTAGAC---
CAGAAGGAAACAGAGCAGTACAATGAAGAGGACCCAATTGATCCAATGAA
Cavia ACAGAT---
CAGAAAGAGACCATCCAGTATAATGAAAAGGACCCATCTGATCCAACCAGA
Homo CCAGAC---
CAGAAGGAGATAGTCCCTTATAATGAAGAGGACCCAGTTGATCCAACCTGGA
Equus CCAGAT---
GTGAAAGAGACAGTCCCTTATAATGAAGAGGACCCAACCTGATCCAACCTGGA

Ursus CCAGAG---
CTGAAAGAAACAGTGCCTTATAATGAAGAGGACCCACTTGATCCAACCTGGA
Bos CCAGAT---
CCAAAAGAGACAATCCCTTATAATGAAGAAGGCCAGCTGATCCAACCTGGA
Sus CCAGAC---
CCAAAAGAGACAATCCCGTATAATGAAGAAGACCCAATTGATCCAACCTGGA
Tursiops CCAGAC---
CCAAAAAGACAATCCCTTATAATGAAGAAGACCCAATAGAGCCAACCTGGA

Ornithorhynchus GATGAACCTAACCTTGGGCCAGGTCCCTGGGAA---
GAGACGGCCAACGGCAAAGAAGAT
Monodelphis GATGAGTTTTACCGGGGACCTGATGCAGGGGGT---
AAGGAATCCAACCTCAAAGGAAGT
Mus_musculus
GATGAATCTTTTCCAGGACAAAGTAGATGGGGGGATGAAGAGATGAACTTCAAAGGAAAC
Rattus
GATGAATCTTTTCCAGGACAAAGTAGATGGGGTGATGACGAGCTGAGCTTCAAAGGAAAC
Cavia
CACGGGCCCTTTCCAGGACTAAGTAGGTGGGGTGAGGAAGTGTTGAGCTTTAATGAAAGG
Homo GATGAAGTCTTTTCCCTGGACAAAATAGATGGGGT---
GAAGAGTTGAGCTTCAAAGGAGGC
Equus
GGTGAAGCTTTCCAGGACAAAGTAGATGGGGTGTGGAGGAGTCAAGCCTTAAACAAGGC
Ursus
GATGAATCTTTCCAGGACAAAGTAGATGGGGTATGGAGGAGACAAGCTTTAAAGAAGGT
Bos
GATGAACTTTCCAGGACAAACGAGATGGAGTGTAGATGAGTCGAACTTTAAGACAGCC
Sus
GATGAACATTTCCAGGACAAAGTAGATGGGATATGGAGGAGTTGAGCTTTAAAGAAGAC
Tursiops
GATGAATCTTTTCCAGGACAAAGTAGATGGAGTGTGGCGGAGTCAAGCTTTAAAGGAGAC

Ornithorhynchus CCCAGT---
AGATACCACAAAAGCCCGCAGTACCCCCAAAGCCGGGCAACCGAACCCCAA
Monodelphis ---
CAAGTTAGGTACCGTGAAAGATACCCATATGCCCCAGTCATCCATCCAAGCCAAAG
Mus_musculus CCAACAGTTAGGCAGTATGAAGGTGAGCACTACGCC-----
TCAACCCTAGCGAAG
Rattus CCAACACTTAGGCAGTATGAAGGTGAGCAATACACC-----
TCAACCCTGGCGAAG
Cavia CCCATGGGAAGGCACAATGATGGTAAGCAGTATGCC-----
TCAAATCAACCAAAG
Homo CCAACAGTTAGGCACTATGAAGGTGAACAATATAACC-----
TCAAATCAGCCAAAG
Equus CCAACAGTTAGGCACTATGAGGGCGAGCAATATAACC-----
TCAAATCAACAAAAA
Ursus CCAACAGTTAGGCACTATGAAGGGGAGCAATATAACC-----

TCAAATCAACCAAAG
Bos CCAACAGCTAGG---TATGAAGGCAAGCAATATAACC-----
TCAAACCAACCAAAG
Sus CCAACAGTCAGGCACTACGAAGGTGAACAATATAACC-----
TCAAATCAGCCAAAA
Tursiops CCAACAGTTAGGCACTATGAAAGCGAGCAATATAACC-----
TCAAATCAACCAAAG

Ornithorhynchus GATTACCCCCGTATCCCGAAGGT---
GGCCTGGAGAAACACCGA---GATTTCCCCTAC
Monodelphis GAATACCCCAACATTCCACAGAT---
AATTTAGAAAAGACAAAGAAATCCG---TCTTAT
Mus_musculus GAATACCTTCCTTATTCCTTAAGT---
AATCCACCAAACCCAGTGAAGATTTTCCTTAC
Rattus GAATACCTTCCTTATTCCTTAAGT---
AATCCACCAAAGCCCAGTGAAGACTTTCCTTAC
Cavia GAATACCTTCCTTATTCCTTAGAT---
AACCATCTAAGCCCAGAGAAGAGTCTCCTTAC
Homo GAATATCTTCCTTATTCCTTAGAT---
AATCCATCAAACCAAGGGAGGATTTTTATTAC
Equus GAATATCTTCCTTATTCCTTAGAT---
AACCATCGAAACCCAGGGAGGATTTTCCTTAT
Ursus GAATACCTTCCTTATTCCTTAGAT---
AATCCATCAAACCCAGGGAAGATTTTCCTTAT
Bos GAATACTCTCCCTATTCCTTAGAT---
AATCTACCAAACCCAGGGAGTATTTTCCTTAC
Sus GAATACCTTCCTTATTCCTTAGAT---
AATCCATCAAACCCAGAGAGGATTTTCTTTAT
Tursiops
GAATACCTTCCTTATTCCTTAGATATTAATCCATCAAACCCAGGAAGGATTTTCCTTAT

Ornithorhynchus
GGTGACTTTTACCCCCGGGGCCAGAAGACAATCTCCAACCGTACAATGGGGCCGATCAG
Monodelphis GGTGAATATTATCCCTGG-----
CACTTTCACCTTACAATTTTGCTCCTCCT
Mus_musculus
AGTGAATTCTATCCCTGGAACCCACAGGAAACGTTTCCAATATATAACCCAGGTCCCTACT
Rattus
AGTGAATTCTATCCCTGGAACCCACATGAACTTTTCCAATCTATAACCCAGGACCTACT
Cavia
ACTGACTTTTATCCTTGGAGCCTTGATGAGACTTTCCTATCCTACAGCCCAGGTCCCACA
Homo
AGTGAATTTTACCCATGGAGCCCGGATGAGAATTTTCCATCATATAAATACAGCTTCTACT
Equus
GGTGAATTTTACCCCTGGAACCCAGATGAGAATTTTCTATCATATGATACAGCTCCCACT
Ursus
GGTGAATTTTACCCCTGGAACCCAGATGAAAATTTTCCATCATATAAATACAGCTCCCACT

Bos
GGTGAATTTTACCCCTGGAGCCCAGATGAGAACTTTCCATCATATAATACTGCTCCCACT
Sus
GGTGAATTTTACCCCTGGAACCCAGAGGAGAACTTCCATCATATAATACAGCTCCCACT
Tursiops
GGTGAATTTTACCCCTGGAGCCCAGATGAGAATTTCCATCATATAATACAGCTCCCACT

Ornithorhynchus CTC-----CCGGTGGAGGGCAGGGGG---
TATTATACCCATGACGCCGTGGGACAGGGA
Monodelphis
CTAACACCACCAAGAGAAAACAGTGGTTATTATTATCCTCCTAACGCCTTGAACAAGAA
Mus_musculus ATAGCACCACCCGTGGACCCAGAAGT---
TATTATGTTAATAATGCCATAGGACAAGAA
Rattus ATAGCACCACCTGTGGACCCAGAAGT---
TATTATGTTAACAATGCAGTAGGACAAGAA
Cavia GTGTCTCCGCCAGGGAAGAACAGAGGT---
CATCAGGTTAATAACGCCATGCGACAAGAA
Homo ATGCCACCACCTATAGAGAGCAGGGGC---
TACTACGTTAATAATGCCGCTGGACCAGAA
Equus GTATTACCACCTGTGGAGAACAAGGGC---
TATTATACTAGTGATGTTATTGGACAAGAA
Ursus GTACCACCACCTGTGGAGAGCAGGGGC---
TATTATGCTAATAATGCTGTTGGACAAGAA
Bos ATACCACTGCTTGTGGAGAACAGGGGC---
TATTATCCTACTAATGCTGTTGGACAAGAA
Sus GTATCATCACCTGTGGAGAGCAGGGGC---
TATTATGCCAACAATGCTGTTGGACAAGAA
Tursiops GAACCGCGCCAGTGGAGAGCAGGGGC---
TATTATGCTAATAATGCCGTTGGACAAGAA

Ornithorhynchus
GGCCCTCTGCAGTTTCCTTCCC GGATTCGTGGGACTGGGGATTACGGTCGGCTGCTCAA
Monodelphis
GAGAGTACACCATCTCCATCTTGGGGTTCATGGGACCAAAGAATTATGTCCCAGCAAAA
Mus_musculus
GAAAGCACTCTCTTTCCTTCATGGACCTCCTGGGACCACAGGAATCAAGCTGAGAGGCAG
Rattus
GAAAGCACTCTCTTTCCTTCATGGACCTCCTGGGACCACAGGAATCAAGCTGAGAGGCAG
Cavia
GGAAGTGCTCTCTTTCCTTCACCAAACCTCCTGGGATCAGGGGATTCAAGTGCAGGGGCAG
Homo
GAAAGCACTCTATTTTCCTTCACGGAATTCCTGGGACCACAGGATACAAGCCCAAGGGCAG
Equus
GAAAACACTCCATTTTCCTTCTTGGAACTCCTGGGACCACAGGATTCAAGCCCAAGGGCAG
Ursus
GAAAGCACTCTGTTTCCTTCTTGGAACTCCTGGGACCACAGGATTCAAACCCCAAGGGCAG
Bos

GAAAACACTATGTTTCCTTCTTGGGAATTCCTGGGACCACATGGTTCAAGTCCAAGGGCAG
Sus
GAAAGCACTATGTTTCCTTCTTGGAGCTCCTGGGATCCCAGGATTCAAGCCCAAGGGCAG
Tursiops
GAAAGCACTATGTTTCCTTCTTGGGAATTCCTGGGACCACAGAATTCAAGCCCAAGAGCAG

Ornithorhynchus
GAAAGAAGAGCACCATACGATGAGAGAGATTCTTGGGACCACGCGATAAAATTCACCCAAA
Monodelphis
AAGGGAAGAATACCATATTATAATAGATATTTCTGGGATCAAGCCACCAATTTACACAAA
Mus_musculus
AAAGAGAGTGAGCCATATTTTAAACAGAAATGTCTGGGATCAGTCAATAAAATTTACACAAA
Rattus
AAAGAAAGTGAGCCGTATTTCAACAGAAATGTCTGGGATCAGTCAATGAGTTTACACAAA
Cavia
CAGGAAAGCGAGCCACAGTTTTCACAGAACTACTGGGATCAGGCAACAAATTTACATGAA
Homo
AGAGAAAGAAGGCCGTATTTTAAACAGAAATATCTGGGATCAGGCAACACATTTACAAAA
Equus
AAAGAAATAAGGCCATACTTTTAAACATAAATTTCTGGGATCAGCCAACAAATTTACACAAA
Ursus
AAAGAAAGGCGGCCATATTTTAAACAGAAATTTCTGGGATCAGCCTACAATTTACACAAA
Bos
AAAGAAAGGAGGCCATATTTTACCAGAACTTTCTGGGGTCAGCCAACGAATCTACCCAAA
Sus
AAAGAAGGGAGACCATATTTTAAACAGAAATTTCTGGGATCAGTCAACAAATTTATACAAG
Tursiops
AAAGAAAGAAAGCCATATTTTAAACAGAAATTTCTGGGATCAGCCAACAAATTTACACAAA

Ornithorhynchus TCGACAGCGGGTGCCACG-----
GAAACCCTGTCCCCGTCCCACAGCGTTCCCGCC
Monodelphis
TCTGCAGCAAGTGCCCTGGAGCAGAGAGAACATCAACCCATTCCAGTAGTTTTCCAGCT
Mus_musculus TCTAATATA-----CCA-----
AACCATCCTTATTCCACTACATCCCCTGCT
Rattus TCTAATATACAAAACCCA-----
AACCATCCTTATTCCACTACATCCCCTGCT
Cavia -----
GTCGGTCCACCAAACCAGAGAAGGAACTATCCCTATCCCAGTCAGCCCCACGTT
Homo
GCCCCAGCTAGGCCACCAGACCAGAAAGGTAACCAGCCCTATTACAGTAACACCCCAGCT
Equus
GCCCCTGCTAATCCACCACACCAGAAAGAGAACCAGCCCTATTCCAGTAACTCCCCGGCT
Ursus
GCACCCCTAGTCCACCACACCAGAAAGAGAACCAGCCCTATCCTAGCAATTCCCCAGCT
Bos
GCCCCTGCTAGTCCACCATAACCACAAGGAGAATCAGCCTTATTTTACAGTAACTCCCCAACT

Sus

ACCCCTACTAGTTCACCACACCAGAAAGAGAACCAGCCTTATTCCAATAACTCCCCAGCT

Tursiops

GCCCCTGCTAGTTCACCATAACCAGAAGGAGAACAAGCCTTATTCCAGTGACTCCCCAGCT

Ornithorhynchus GGCATCCGAGGAAAGCCACAT---

GAAGAATCCGTGGATTGGAGCTACAGAGGAGGGCAG

Monodelphis

GGGCTTAGAGGAAGCCTAACATACCAAGAAACAGAGAATCTGAACTATGACAGTGTACAC

Mus_musculus

AGATTTCCAAAAGATCCAACATGGTTTGAAGGTGAGAATTTGAACTAT---GATTTGCAA

Rattus

GGATTTCCAAAAGATCCAACGTGGCTTGAAGGTGAGAATTTGAACTAT---GATTTACAA

Cavia

GGGCTCCAGAAAACCCCAACCTGGCAGGAAGGCAAGAATCTGAATTAT---GATATGCAA

Homo

GGGCTTCAGAAAAATCCAATATGGCATGAAGGTGAGAATTTGAACTAT---GGCATGCAA

Equus

GGGCTTCAGAAAAATCCAACATGGCCTGAAGGTGAGAATTTGAATTAT---GGCATGCAA

Ursus

GGACTTCAGAAAATCCAACATGGCGTGAAGGTGAGAATTTGAATTAT---GGCATGCAA

Bos

GGGCTTCAGAAAGATCCAACATGGCATGAAGGTGAGAATTTGAATTAT---GGCATGCAA

Sus

GGTCTTCAGAAAAATCCAACATGGCATGAAGGTGAGAATTTGAATTAT---GGTATGCAA

Tursiops

GGGCTTCAGAAAAATCCAATATGGCATGAAGGTGAGAATTTGAATTAT---GGCATGCAG

Ornithorhynchus

GTCTCCGACTTGGGTGTCCCAGAGGCGGAGGGGCCGGCTCTAATGGAGCCAGTGGCCCCGG

Monodelphis

AATAACAGGATAAACTCCTGAAAAAGGACAGTTTCTGTCACTGACTCTGTGATTCAA

Mus_musculus

ATTACTAGTTTAAAGTCCACCAGAAAGAGAACAGTTGGCTTTCCCAGACTTCTGCCTCAA

Rattus

ATTACTAGTTTAAAGTCAACCAGAGAGAGAACAGTTGGCTTTCCCAGACTTGGAGCCTCAA

Cavia

ATGACCAGGTTGTATTCACCAGAGAGATCGCATTTGGCTTTCCCTGATGTAATGCCTCAG

Homo

ATAACTAGGATGAATTCTCCAGAGAGAGAACATTCATCTTTCCCTAACTTCATCCCACCA

Equus

ATTACTAGGTTAAATTCACCAGAGGGAGAACATGTGGCTTTCCCAGACTCAATTCCTCTG

Ursus

ATTACCAGATTAAATTCACCAGACGGAGAACATTTGGCTTTCCCGGACTTAATTCCTCCA

Bos

ATCACTAGGTTAAATTCACCAGAGGGAGGACATTTGGCTTTTCCAGACTTAATTCCTCCA

Sus

ATCACTAGGTTAAATTCACCAGAGAGAGATCATTTGGCTTTCCCAGATTTAATTCCTCCA
Tursiops
ACCAC TAGGTTAAATTCACCAGAAAGAGAACACTTGGTTTTCCCAGACTTAATTCCTCCA

Ornithorhynchus
AGCGATCCGGCCGACCCCAGAGAAGCCTCGTCCTACCCCGTGGCCGTGCCAGAAGTTCC
Monodelphis
AACAACTGATATATCAAGGCGAAGTATATTCATATTCCCCAGCCAGCCAAAGAAGTCCC
Mus_musculus AGTTACCCAACAGGTCAAAATGAAGCACACTTATTTACCAA---
AGTCAAAGAGGGTCT
Rattus AGTTACCCAACAGGCCAAAATGAAGACCATTTATTTACCAA---
AGTCAGAGAGGGTCT
Cavia AGCTATCCCTTAGGTCAAACAGAATCACATTTATTTACCCA---
AACCAAGCAGCTCC
Homo AGTTACCCATCAGGTCAAAAAGAAGCACATTTATTTACCTA---
AGCCAGAGAGGCTCT
Equus AGTTACCCAGCAGGTCAAAAAGAAGCACATTTATTTACCTA---
AGCCAGAGAAGCCCT
Ursus AGTTACCCAGCAGGTCAAAAAGAAGCACATGTATTTACCTT---
AGCCAGAGAGGCCCT
Bos CATTACCCAGGAAGTCAAAAAGAAACACGTCTATTTACCTA---
AGTCAGCGAGGCCCT
Sus GATTACCCAGGAGGTCAAAAAGAATCACATGTCTTTACCTA---
AGCCAGAGGGGCCCT
Tursiops AGTTACCCAGCAGTTCAAAAAGGAGCACATTTATTTACCTA---
AGCCAGAGAGGCCCT

Ornithorhynchus
TGCTGTGCCGGTGGCTCCCCAGGCCCCAGGGACGTCCCACTGGCCCCGCCGGACTATCCT
Monodelphis
TGCTGTGCTGGTGAATCCCAGGGCCCAGAGAAAGCCCTCTCATTTCC-----
Mus_musculus
TGCTGTATTGGTGGCTCCACAGGACATAAAGACAATGTGCTGGCTCTA-----
Rattus
TGCTGCATTGGTGGCTCCACAGGACATAAAGAAAATGTGCTGGCTTTA-----
Cavia
TGCTGTGTTGGGGGTGCTGCAGGGCCCCATAAGAATCCCTTGGCCCTG-----
Homo
TGCTGTGCTGGTAGCTCCACAGGGCCAAGGACAATCCACTAGCTCTA-----
Equus
TGCTGTGTCGGTGGCTCCATAGGGCCCCAGGACAATCCACTTGCTCTA-----
Ursus
TGCTGTGCTGGTGGCTCCACAGGACACAAGGACAATGCACTTGCTCTC-----
Bos
TGCTGTGCTGGTGGCTCCATAGGGCCCCAAGGACAATCCACTTGCTCTA-----
Sus
TGCTGTGCTGGTGGCTCCATGTGGCCCCAAGAACAATCCACTTGCTCTA-----

Tursiops

TGCTGTGCTGGTGGCTCCACAGGGCCCAAGGACAATCCACTTGCTCTA-----

Ornithorhynchus

CCACTGGCCCTCCCAGGCTACCTTCCACTAGACCCCTGGATTACCCTCCGCTAGACAGA

Monodelphis

Mus_musculus

Rattus

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Ornithorhynchus

CCAGACTACCTTCCACCGGCCCCACGGGACTACCCTCCACCGGACACACCGAACTATTCT

Monodelphis

Mus_musculus

Rattus

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Ornithorhynchus
CCACTGGACACACCGGACTACCCTCCACACTACCCTCCGCTGGCCCCCAAGACTACTCC
Monodelphis
-----CTCGATTACTCT
Mus_musculus
-----CAAGACTACTACT
Rattus
-----CACGACTACTACT
Cavia
-----CAAGACTACACC
Homo
-----CAAGACTACTACT
Equus
-----CAAGACTACTACT
Ursus
-----CAGGACTATACT
Bos
-----CAAGACTACTACT
Sus
-----CAAGACTATACT
Tursiops
-----CAAGACTACTACT

Ornithorhynchus
TCGCCATTAGGTCTCTCCCTGTGGGAGCTTCAAGTCGGAGGCCCCGGAGCCCCGGAGGT
Monodelphis
CCACCCTTTGGTCTTGTTCAGGAGATGATGGAGAAAGAAATCCCCCAACTACGGAGGGC
Mus_musculus
TCATCCTATGGTCTTCCACCAAGGAAGAACCAAGAAACCAGTCCAGTGCATACAGAAAGC
Rattus
TCATCCTATGGCCTTCCACCAAGAAAGACCCAAGAAATCAGTCCGTGTGCATACAGAAAGC
Cavia
CCATCCTATGGCCTGGCGCCAGGAGAGAATCACAAACCAATCCCACCTACACAGAAAGT
Homo
CCATCCTATGGTCTTGCACCTGGGGAGAACCAAGACACCAGTCCCTCTGTATACAGACGGT
Equus
CCATCCTTTGGTCTCTTACCAGGGGAGAACCAAGACACCAGCCTTCTGTATATGGAAGAT
Ursus
CCATCCTTTGGTCTTGTACCAGGAGAGACTCAAGACACCAGCCCTCTGTACACAGAAGAT
Bos
CTTTTTTTTTGGTCTTGCACCAGGGGAAAACCAAGACACCAGCCCTCTCTATACAGAAGAC
Sus
CAATCCTTTGGTCTTGCACCAGGGGAGAACCCAGACACCAGCATTGGGTATGCAGAAGAT
Tursiops
CCATCCTTTGGTCTTGCACCTAGGGGAGAACCAAGACACCAGCCCTGTGTATATAGAAGAC

Ornithorhynchus
AGCCGCTCCAGGCACGTGCAGCAGGCGGCCTCCCCGGTGGGCTACCCGGCCATCCGGAGA
Monodelphis
ATCCACATGAAGCATGCGAGGCACATCATCTACTCCACAGACATCCAACCCAACCAAAGA
Mus_musculus
AGTTATATCAAGTATGCAAGACCTAACGTTTCCCCAGCAAGCATCCTACCTAGTCAAAGA
Rattus
AGTTATAACCAAATATGCAAAACCTAATGTTTCCCCAGCAAGCATCCTACCTAATCAAAGA
Cavia
AGTCACACCACGCACACACGACCGAATGTTTCCCCAACCCAGCATCCTGCCTGGCCAGAGG
Homo
AGTCATAACCAAGCAGACAAGAGATATCATCTCCCCAACCAAGCATCCTACCAGGCCAAAGA
Equus
AGTCACACTAACCATGCAAGAGATACCATCTCCCCAACCAATCATCCCACCTGTCTGAAGGA
Ursus
AGTCATACTAAACATGCAAGACATAACCATCTCTCCTACAAGCAACCTGCCTGACCAAAGA
Bos
AGTCATACTAAGCATGAAAGATATACTATTTCCCCAACCAAGCATCCTACCTGGCCAAAGA
Sus
AGTCATATTAAGTATGCGAGACAGACTGTCTCCCCGACAAGCATTTGTACCTGGCCAAAGA
Tursiops
AGTCAAACCTACGCATGTAAGACATACTATCTCCCCGACAAGCATCCTAGCTGGCCAAAGA

Ornithorhynchus
AACGGCACGGAAGAAGCACCCCCACGCGGCGGGAGGAGCCGGCTCCTTCCAGAGACGGA
Monodelphis
AATAGTTCAGAGAAAAATCTATCTGAGAAAGGAGCAAATCCAGACCCTTTCAGGGCTGAC
Mus_musculus
AATATCTCAGAGAACAACAACTAAGTGCAGAAAGCCCAAACCCAAGTCCATTTGGAGATGGT
Rattus
AATATCTCAGAGAACAACAACTGACTGCAGAAAGCCCAAACCCAAGTCCATTTGGAGATGAT
Cavia
AATAGCTCAGAGAAGAAACTTCCTGGGGAAAGCACAAAGCCAAGCACTTTGAGAGACAAT
Homo
AACAGCTCAGAGAAGAGG-----GAAAGCCAAAAC-----
CCTTTTAGAGATGAT
Equus
AACAGCTCAGAGAAAAGACTGCCTGGAGAAAGTCAAACCCAAGTCCCTTTTGGAGATGAT
Ursus
AACAGCTCAGAGAAAAGACTGCCTGGGGAAAGTCAAACCCAAGTCCCTTTTAGAGATGAC
Bos
AACAGCTCAGAAAAAAGACTTCCTGGAGAAAGTCAAACCCAAGTCCCTTTCAGAGATGAC
Sus
AACAGCTCAGAAAAAATACTGCCTGGAGAAAGTCAAACCCAAGTCCCTTTCAGAGATGAT
Tursiops
AACAGCTCAGAGAAAAGACTGCCTGGAGAAAGTCAAACCCAAGTCCCTTTCAGAGATGAC

Ornithorhynchus CTAGCACCG---
GGAAGGAGCCCTCCTTGCTCCCTAAGGCCCGGGCGAGCCCGAGGGCA
Monodelphis
ACAGCCATGTTGAAAAAAGCTCACCTTGTTCTAAAAGGAGCCAGCAGGCCAGACAGAA
Mus_musculus
GTGCCTACTGTGAGGAAAAATACTCCATATTCTGGAAAGAATCAACTA---GAGACAGGA
Rattus
GTGCCTACTGTGAGAAAAAACACTCCAAATTCTGGAAAGAATCAACTG---GAGACAGGA
Cavia GTGCCTCTCTG---
AAGAATGCTCCATGCTCTGCAAAGACCCAGCAGGGCACAGGGGGA
Homo
GTGTCCACGCTGAGGAGGAACACACCATGTTCTATAAAGAATCAACTGGGCCAAAAGGAA
Equus
GTGTCCCCTCTGAGGAGGAACATAACCATGTTCTATAAAGAATCAACTAGGTCAAAGAGGA
Ursus
GTGTCCACTCTGAGAAGGAACACACCATGTTCTATGAAGAATCAACTGAGCCAGAGGGGA
Bos
GTGTCCACTCTGAGGAGGAACACACCATGTTCTATAAATAATCAATTGAGCCAAAGGGGA
Sus
GTGTCCACTCTGAGGAGAAGCACACCATGCTCTGTAAAGAGTCAGTTGAGTCAAAGGGGA
Tursiops ATGTCCACTCTGAAGAGGAACACACCACGTTCTATA---
AATCAGTTGGGCCAAAAGGGGA

Ornithorhynchus
GGACTGGCCTTTCCCAGGCGGATTGCCCCCAGCCAAGCCCGCCCTTGTTTCAAAGC
Monodelphis AGCGTGCCTTTTTCTGAAGCTGACTCCCTCCAAGCA---
AACATGCCCTGCCGCAAAGT
Mus_musculus
ATTGTGGCCTTTTCTGAAGCCAGCTCTTCTCAGCCAAAAACACGCCCTGTCTTAAAAGT
Rattus
ATTATAGCCCTTTTCTGAAGCCAGCTCTTCTCAGCCAAAAACACAGCCTGTCTTAAAAGT
Cavia GTCAGATCCTTTCCCAAAGCCAGTGCCCTCAGTCA---
AACACACTTTGTCTCAGTAAT
Homo
ATTATGCCCTTTTCTGAAGCCAGTTCCCTTCAATCAAAGAATACACCTTGTCTCAAAAAT
Equus
ATTATGCCCATTCCTGAAGCCAGTTCCCTTCAACCAAAGAATACACCTTGTCTCAAAGT
Ursus
ATTATGCCCTTTTCTGAAGCCACTTCCCTTCAATCAAAGAATATGCCTTGTCTCACAAGT
Bos
ATTAGGCCCTTTTCTGAAGCCAGTTCCCTTCAATCAAAGAATATACCTTGCCTCAAAGT
Sus
ATTATGCCCTTGCCTGAAGCCAATTCCCTTCAATCAAAGAATACACCTTGCCTCACAAGT
Tursiops
ATTATGCCCTTTCCCAGAACAGTTCCCTTCAATCAAAGAATACACCTTGCCTCAAAGT

Ornithorhynchus

AGGCTGAGGGGCGACGTGGACAGTGTCCCGGAGCAGATCCTGGACCCGGACCCGCCGGTC
Monodelphis
AACCTTAGAGGAGAAGGGAACAATGTTCTTGCAAAAATCTTGGGAGTCAACCAGTTCAAT
Mus_musculus
GACCTTGGAGGAGATCGGAGGGATGTTCTGAAACAATTTTTTTGAAGGCAGCCAGCTGAGT
Rattus
GACCTTGGAGGAGATCGGAGGGATGTTCTGAAACAGTTTTTTCGAAGGCACCCAGCTCGGT
Cavia
GATCTTGGAGGAGATGGGAACAGCGTTCTGGAACAAATTTTTGAAGGCAACCATCTCAGC
Homo
GATCTTGGAGGAGATGGGAACAACATTCTGGAACAAGTTTTTGAAGACAACCAGCTCAAT
Equus
GATCTTGGAGGAGATGGGAACAATGTTTTGGAACGAATATTTGAAGGCAACCAGCTCAAT
Ursus
GATCTTGGAGGAGATGGGAACAATGTTTTAGAACAATATTTGAAGACAACCAGTTCGAT
Bos
GATCTT---
GAAGATGGAAACCATGTTTTGGAACAACATTAGAAGGCAACCAGCTCAAT
Sus
GATCTTGGGGGAGATGGAAACAATGTTTTGGAACAATATTTGAAGGCAACCAGCTCAAT
Tursiops
GATCTTGGAGGAGAAGGA---
AACATTTTTGGAACAATATTTGAAGGCAACCAGCTCAAT

Ornithorhynchus
GCGGGGAACGACGGCCCGCTCCCGGAGACCTGGCCGTGGTGGTCCCGGAGCGGGATCCG
Monodelphis
GCAAGAACCAGTAACCTTATCCCTGAGGAACTC-----
GAGGCTCCTGAAGAAAATCTC
Mus_musculus
GAAAGAAGTCTGGCCTTACTCCTGAGCAGCTCGTCATTGGTATTCCTGATAAAGGCTCT
Rattus
GAAAGAAGTCTGGCCTGACCCCTGAGCAGCTCGTCATTGGTAGTCCTGATAAAGGCTCT
Cavia
GAAAGAAGTGTCAACCTTACTCCTGAGCAGCTTTTTATTGGAACACTTAATGAAGGCCTC
Homo
GAAAGAAGTGTGACCTTACTCCTGAGCAGCTTGTATTGGTACACCTGATGAAGGCTCC
Equus
GAAAGAAGTGTGACCTTACTCCTGAGCAGCTTGTATTGATATACCTGATGAAGGCCCC
Ursus
GAAAGAAGTGTGACCTTACTCCCGAACAGCTTGTATTGCGTTCACCTGATGAAGGCCA
Bos
GAAAGACCTGTTGATCTTACTCCTGAGCAGCTTGTATTGGATACACCTGATGAAGGTCCC
Sus
GAAAGAAGTGTGACCTTACTCCTGAGCAGCTTGTTTTTGGTACACCTGACAAAGAGCCC
Tursiops
GAAAGAAGTGTGATCTTACTCCTGAGCAGCTTGTATTGGTACACCTGATGAAGGTCCC

Ornithorhynchus
GGGCCAGTGGGCATC-----
AGAGGGGACCCGGAACCGGGCCGGAGGCCGGC

Monodelphis

GGGCCAGAAAATATCCAAAGTGAAGGGGAGGAAGTGAGGGTCGTGTGAAACAGAAAGGA

Mus_musculus

GGCCAGATAGCATACAAAGTGAAGTCCAAGGAAAAGAGGGTGAGATGCAGCAACAAAGG

Rattus

GGCCCAGATGGCACACACAGTGAAGTCCAAGGCAGTGAGGGTGAAATGCAGCAGCAGAGG

Cavia

AAGCCCCAGGTATCCAAAAGGAAATGCAAGGAGAGGAGGATGACAGGCCGCAACAGAGG

Homo

AATCCAGAAGGCATCCAAAGTCAAGTCCAAGAAAATGAGAGTGAGAGGCAACAGCAAAGA

Equus

AAGCCAGAAGGAATCCAAAGTGAAGTACAAGGAAACGAAGGTGAAAGGCAGCAACAAAGG

Ursus

CAGCCAGAAGGAATCCAAAGTGAAGTGAAGGAAATGAGGATGAAGGGCAGCAACAACGA

Bos

AAGCCAGAAGGAATTCCAAGTGAAGTGAAGGAAATGGGGGCAAAAGGCAGCAACAAAGA

Sus

AGGCCAGAAGGAATCCCAAATGAAATGCAAGGCAATGAGAGTGAAAGGCAGCAACAAAGA

Tursiops

AAGCCAGAAGGAATTCCAAGTGAAGTGAAGGAAATGAGGGTGAAAGG---CAGCAAAGA

Ornithorhynchus

GCCCCGGGCTTCCAGTGGGTGCCCTGCTTCCGGCAGCGAGACTCAAATCATTACTTGGCA

Monodelphis

GTGCCTAATATCCAGAAGGTGCCATGCCTCCACTCTAAACTAAAGGACCACCTCCTTTCC

Mus_musculus

CCACCTACCATCATGAAGTTGCCATGCTTTGGCTCCAAT---

TCAAATTTCACTCTTCT

Rattus

CCACCCACCATCCGGAAGTTGCCATGCTTTGGTTCCAAATTAGCAAACCTTCACTCTTCT

Cavia

CCACCTAGCATCCTGCAGGTACCATGCTTTGGCTCCCAACTAACACAGCTTCACTCCTCT

Homo

CCATCTAACATTCTGCATTTGCCATGCTTTGGCTCCAAATTAGCAAAGCATCACTCTTCC

Equus

CCACCTAGCATCCTACAGTTACCATGCTTTGGCTCCAATTTAGCAAAGTATCACTCCTCC

Ursus

CCATCCAGCATCCTACAGTTACCATGCTTTGGCTCCGAAATAGCGAAGTACCACTCCTCC

Bos

CCATCTACCATACTAAAGTTACCATGTTTTGACTCCAAATTAACAAAGTATTACACCTCC

Sus

CAATCTAGCATCCTACAGTTACCATGTTTTGGCTCCAAATTAGCAAATTATCACACCTCT

Tursiops

CCATCTAGCATCCTACAGTTACCATGTTTTGGCTCCAAATTAACAAAGTATCACACCTCC

Ornithorhynchus

TGGACGGGCGCTCCCCCTGGCAACGAGAAGCCGGACCCATCCGAGCCGGTGTCCACCGCA

Monodelphis

AGCACAGGTGCTCCACTTGGCAAGAGGAGACCAGGCCTGTCCACTGGAGAGCCAGCCATG
Mus_musculus
ACCCTGGACCTCCAATTAACAACAGAAGACCAACCCTACTTAATGGTGCTCTCTCCACA
Rattus
AGCACTGGACCTCCAACATAACAATGGAGGGCCAAGCCTACCTAATGGTGCTCTCTCCACA
Cavia
AGCACTGGAACCTCCATCTAGCAGTAGAAGACCAGGCCATCTGGTGGGGATCTAACTAAG
Homo
ACCACCGGAACTCCATCTAGCGATGGAAGGCCAAGCCATTTGATGGGGATTCAATTACG
Equus
GGCGCTGGAACCTCCGTCTAGCATTGGAAGGCCAGGCCTATTTGACGGGGATCCAATTATG
Ursus
AGCACAGGAACTCCATCTAGCATTGGAAGGCCAAGGCCATTTGATGAAGATCCAATTATG
Bos
AGCACTGGGACTCCATCTAGTCTTGGAAAGGCCAAGGCTCATTGATGGGGATCCAATTATG
Sus
AGCATTGGAACCCCATCTAGCCTTGGAAAGGCCAAGACTCATTGATGGGGATCCAATTATG
Tursiops
AGCACTGGAACCTCCATCTAGCATTGGAAGGCCAAGGCTCATTGATGGGGATCCAATTACG

Ornithorhynchus CCCGCAGAGACCCTGGAC---
GCGGTCTCTGGGCTTCCGACCGGGGTGCCTTCCGAGGGC
Monodelphis
GTCTCTGCCCAGCCCAGCAGCACATTGACTGGATTGACAGCTAGGGAGCAGCTTGGTGGT
Mus_musculus CCCACTGAAAGTCCTAAC---
ACATTGGTTGGGTTAGCTACTAGGGAACAATTTAAAAGT
Rattus CCCACCGAAAGTCCTGAC---
ACATTGGTTGGGTTAGCTACTAGGGAACAATTTAAAAGT
Cavia CCTACTGAAAATCCTAAC---
ACATTTGTTGGGTTTCGCTACTGGGGAGCCATTTAGAAGT
Homo CCTACTGAAAATCCTAAC---
ACATTGGTTGAGTTAGCTACTGAGGAACAATTTAAGAGT
Equus CCTACTGAAATTCCTAAT---
TCATTGGCTGGGTTAGCTACTGGGGCAGAGTTTCAGAGT
Ursus CCTACTGAAAGTCCAAAC---
TCATTGTCTAGATTAGCTACTGGGGCAGAGTTTCAGAGT
Bos CCTACTGAAATTCCTAAC---
TCATTGGCTGAGTTAGCCACTGGGGCACAGTTTCAGAAT
Sus CCTACTGAAACTCCTAAC---
TCTTTGGCAGGGCTAGCTACTGGGGCACAGTTTCAGAAT
Tursiops CCTACTGAAATTCCTAAC---
TCACTGGCTGAGTTAGCTACCAGGGCACAGTTTCAGAAT

Ornithorhynchus CCCAGCCTT---
CCCCGTTTCATCAGAACTTTACCGCCCTTCAAGACCCTCCAGTGGGAA
Monodelphis ACAAATATCGACCCACTCGTTGCCTCAGAG---
CCACCTCTTTCTTTTCCATCT-----

Mus_musculus

ATAAACGTAGATAAACTTAATGCAGATGAACACACTACACTCGAATCTTTTCAA-----

Rattus

ATAAATGTCGATCAACTTAATGCAGATGGACACACAACACTTGAATCTTTTCAA-----

Cavia

ATAAATGCTGACCAGCTCAGTGTAGCAGGACACACTCCATTTGAATCTTTTCAA-----

Homo

ATAAATGTAGACCCACTTGATGCAGATGAACACAGTCCATTTGAATTCCTTCAA-----

Equus

ATAAGTGTAGACCCACTTAATGCAGATGAGCACACTTCATTTGATTACCTTCAA-----

Ursus

ATAAATGTAGATCCACTTAATGCAGATGAACACACTCCATTTGATTCTCTTCAA-----

Bos

ATAAATGTAGACCCACTTAATGCAGATGATCACACTCCATTTGATCCTCTTCAA-----

Sus

ATAAATGTAGACCCACTTAATGAAGATGAACACACTCCATTCGATTCTCTTCAA-----

Tursiops

ATAAATGTAGACCCACTTAACGCAGATGAACACACTCTATTTGATTCTCTTCAA-----

Ornithorhynchus

GTGGCAGACGGTCCGGAACAACAGGGAGCCGACTGCTCGTTGCTCCAGAAC

Monodelphis

CTTTC AATCCCAAAGAATGCAGAGTTTCAGGACTGCCTGCTGCTCCACAGC

Mus_musculus ---GGAACCAGTCCACAGGACCAA-----

GGCTGCTTACTGCTTCAGGCT

Rattus ---

GACACCAGTCAACAGGACCAAGCACACGGCTGTTTACTGCTTCAGGCT

Cavia

AGAGGGACTGATCCTCAGGACCAGATACAAGACTGCTTACTAATTCAGGTC

Homo

AGAGGGACCAATGTACAGGACCAGGTACAAGACTGCTTACTACTTCAGGCC

Equus

ATAGGGACCGATCCAGAAGACCAGGTGCAAGACTGCCTACTACTTCAGGCC

Ursus

TTAGGGACCAACCCACAGGACCATGTGCAAGACTGCTTACTACTTCAGGCC

Bos

GTAGGGACCAATCCACAGGACCAGGTTCAAGACTGCTTACTACTTCAGGCC

Sus

ATAGGGACCAATCCACAGGACCAGGTGCAAGATTGCTTATTACTTCAGGCC

Tursiops

GTAGGGACCAATCCACAGGACCAGGTGCAAGACTGCTTACTACTTCAGGCC

Mammal+Reptiles-AMBNseqs-AA-Aln.txt

CLUSTAL format alignment by MAFFT (v7.397)

Allig_sinensis

Allig_mississip

Crocodilus_poro

Gharial

Caiman

Tursiops

M-----

Sus

M-----

Bos_taurus

M-----

Ursus

M-----

Equus

M-----

Homo

M-----

Cavia

M-----

Rattus

M-----

Mus

M-----

Monodelphis

M-----AREQNV-----

EKRREDSVQSL-----GVLV

Ornithorhynchus

MIPLIVAQVGAQGAILSSEELIFTGLFIQPLAPGRMAPIGQDNPEDQDQVLPTGQSGMSP

Cobra

Thamnophis

Crotalus_horrid

Crotalus_mitche

Protobothrops

Vipera

Pantherophis

Boa

Python_molurus

Ophisaurus

Shinisaurus

Pogona

Anolis

Gekko

MournGecko

Eublepharis

Aspidoscelis
MK-----

Allig_sinensis

-----MNVWML-MLCL

Allig_mississip

-----MNVWML-TLCL

Crocodylus_poro

-----MNVWML-TLCL

Gharial

-----MNVWML-TLCL

Caiman

-----MNVWML-TLCL

Tursiops

PALKIPLFKMKDMIL-ILCL

Sus

PALKIPLFKMKDMVL-ILCL

Bos_taurus

PALKIPLFKMKDMIL-ILCL

Ursus

SALKIPLSKMKDLIL-ILCL

Equus

PALKIPLFKMKDLVL-ILCL

Homo

SASKIPLFKMKDLIL-ILCL

Cavia -----
 SPSKIPLFKMKDLML-FLSL
 Rattus -----
 SASKIPLFKMKGLLL-FLSL
 Mus -----
 SASKIPLFKMKGLIL-FLSL
 Monodelphis -----PLTRS-----LDWYLQALG-----
 TRLPVVKKSLFKMKDLLL-MLCL
 Ornithorhynchus
 ATQDPPEQPPPTASGLLDESEVTLPANLQGVSLTTEESTTEEPRGPTLKMENLVL-ILSL
 Cobra
 -----MKQWTF-VLCL
 Thamnophis
 -----MKQWTF-VLCL
 Crotalus_horrid
 -----MKQWIF-ALCL
 Crotalus_mitche
 -----MKQWIF-ALCL
 Protobothrops
 -----MKQWIF-ALCL
 Vipera
 -----MKQWIY-VLCL
 Pantherophis
 -----MKQWTF-VLCL
 Boa
 -----MKQWIF-VLCL
 Python_mulurus
 -----MKQWIF-VLCL
 Ophisaurus
 -----MKQWIL-VSCL
 Shinisaurus
 -----MKQWILVVSCL
 Pogona
 -----MKQWIL-VSSL
 Anolis
 -----MKQWML-VSSL
 Gekko
 -----MKRWIL-VSCL
 MournGecko
 -----MKRWIL-VSCL
 Eublepharis
 -----MKRWIL-VSCL
 Aspidoscelis -----
 DLKQWIL-FSWL

:: *

Allig_sinensis LGTGFALP---MYPQHTGT-----RGMASMSLE-MRQYGR-
 QNMNMLPQ-YGR-YDYGEP
 Allig_mississip LGTGFALP---MYPQHTGT-----RGMASMSLE-MRQYGR-
 QNMNMLPQ-YGR-YDYGEP
 Crocodilus_poro LGTGFALP---MYPQHTGT-----RGMASMSFE-MRQYGR-
 QNMNMLPQ-YGR-YDYGEP
 Gharial LGTGFALP---MYPQNTGT-----RGMASMSLEKMRQYGR-
 QNMNMLPQ-YGR-YDYGEP
 Caiman LGTGFALP---MYPQHTGT-----RGMASMSLE-MRQYGR-
 QNMNMLPQ-YGR-YDYGEP
 Tursiops LKMSSAVP---VFPQQPGT-----
 PGMASLSLETMRQLGSLQGLNMLSQ-YSR-FGFGKS
 Sus LKMSSAVP---AFPRQPGT-----
 PGVASLSLETMRQLGSLQGLNMLSQ-YSR-FGFGKS
 Bos_taurus LKMSSAVP---AFPQQPGI-----
 PGMASLSLETMRQLGSLQGLNLLSQ-YSR-FGFGKS
 Ursus LGMSSAVP---VFPRQPGT-----
 PGMASLSLETMRQLGSLQGLNMLSQ-YSR-FGFGKS
 Equus LEMGSVP---AFPRQPGI-----
 PGMASLSLETMRQLGSLQGLNMLSQ-YSR-FGYGKS
 Homo LEMSFVP---FFPQQSGT-----
 PGMASLSLETMRQLGSLQRLNTLSQ-YSR-YGFGKS
 Cavia LKISFVP---
 AFPQQPGAPNMAPPGMASLSLETMRQLGSLQGLNALSQ-YSR-FGFGKS
 Rattus VKMSLAVP---
 AFPQQPGAQGMAPPGMASLSLETMRQLGSLQGLNALSQ-YSR-LGFGKA
 Mus VKMSLAVP---
 AFPQQPGAQGMAPPGMASLSLETMRQLGSLQGLNALSQ-YSR-LGFGKA
 Monodelphis LGTSFAVPIKQVYPQQAAA-----
 TGLGSLLETMRQLGNLNLNLLSQ-FSR-FGYGKP
 Ornithorhynchus FGTSFAIP---VFLQPGGP-----PGMGSLSLETMRHLGN---
 LNLLPQ-FSR-FGFGKQ
 Cobra LGTCSALP---ILPRHAGI-----
 PGMGSISLEGMRQLGGPSIPKVLPQ-YGQTYSYADP
 Thamnophis LGTCSALP---VLPRHAGI-----
 PGMGSISLEGMRQLGGPNVPKVLPQ-YGQTYSYADP
 Crotalus_horrid LGTCSALP---ILPHHAGI-----
 PGMGSISLEGMRQLGGPSISKVLPQ-YGQTYSYADP
 Crotalus_mitche LGTCSALP---ILPHHAGI-----
 PGMGSISLEGMRQLGGPSISKVLPQ-YGQTYSYADP
 Protobothrops LRTCSALP---ILPHHAGI-----
 PGMGSISLEGMRQLGGPSISKVLPQ-YGQTYSYADP
 Vipera LGTCTALP---ILPHHAGI-----
 PGMGSISLEGMRQLGGPSISKVLPQ-YGQTYSYADP
 Pantherophis LGTCSALP---ILPRHAGI-----
 PGMGSISLEFTRHIGGLWVPQANPRLYGQTYSYADP
 Boa LGTCSALP---ILPRHAGI-----

PGMGSISLEGMROLGGPSIPNIFPQ-YAQTYSYADP
Python_mulurus LGSCSALP---ILPRHAGI-----
PGMGSISLEMMRKLGGPGIPQEDVT-YAQPYSYADP
Ophisaurus LGICSALP---ILPQHAGI-----PGLGSISLERLRQFGRPNMPNV--
Q-YAQPPTYNDP
Shinisaurus LGICSTLP---IRPQHAGI-----
PGIGSISLEGMROFGRPNMPNVLPQ-YAQPPTYADP
Pogona LGICSALP---ILPQHAGI-----
PGLGSISLETMRQMGGRNGPNALSQ-YAMPYSYGDL
Anolis LGICSALP---LFPQHAGI-----
PGMGSISLERTRQLGGLNIPPAVPQ--ALPYSYADP
Gekko LEICSAMP---ILLQHSI-----
PGIGSISLEXXXXXXXXXXXXXXXXXX-YARHYTYADP
MournGecko LEICSAMP---ILLQHSI-----
PGIGSISLEXXXXXXXXXXXXXXXXXX-YARHYTYADP
Eublepharis LGICSAMP---MLPQHPI-----
PGMGSISLXXXXXXXXXXXXXXXXXX-YARHYSYSDP
Aspidoscelis LGICSALP---XXXXXXXXX-----
XXXXXXXXXXXXXXXXXXXXXXXXXX-L---YTYADP

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Allig_sinensis FNSVWLHGLLPPHSS-
FPWLQORPQERETQQYEYAMPVHPPPLPSQQTPLQPQQPRLQAO
Allig_mississip FNSVWLHGLLPPHSS-
FPWLQORPQERETQQYEYAMPVHPPPLPSQQTPLQPQQPRLQAO
Crocodilus_poro FNSVWLHGLLPPHSS-
FPWLQRRPQEHETQQYEYAMPVHPPPLPSQQTPLQPQQPRLQAO
Gharial FNSVWLHGLLPPHSS-
FPWLQRRPQEHETQQYEYAMPVHPPPLPSQQTPLQPQQPRLQAO
Caiman FNSVWLHGLLPPHSS-
FPWLQORPQEHETQQYEYAMPVHPPPLPSLQTPLOPQQPRLQAO
Tursiops FNSLWMHGLLPPHSS-FPWM--
RPREHETQQYEYSLPVHPPPLPSQPS-LQPQPG---Q
Sus FNSLWMHGLLPPHSS-FQWM--
RPREHETQQYEYSLPVHPPPLPSQPS-LQPQPG---Q
Bos_taurus FNSLWMNGLLPPHSS-FPWM--RPREHETQ-----
QPS-LQPQPG---Q
Ursus FNSLWLHGLLPPHSS-FPWM--
RPREHETQQYEYSLPVHPPPLPSQPS-LQPQPG---Q
Equus FNSLWMNGLLPPSS-FPWM--
RPREHETQQYEYSLPVHPPPLPSQPS-LQPQPG---Q
Homo FNSLWMHGLLPPHSS-LPWM--
RPREHETQQYEYSLPVHPPPLPSQPS-LKPQPG---L
Cavia LNSLWLQGLLPPSS-FPWL--
RPREHETQQYEYSVPVHPPPLPSQPS-QQPPQPG---M
Rattus LNSLWLHGLLPPHNS-FPWI--

GPREHETQQYEYSLPVHPPPLPSQPS-LQPHQPG---L
 Mus LNSLWLHGLLPPHNS-FPWI--
 GPREHETQQYEYSLPVHPPPLPSQPS-LQPHQPG---L
 Monodelphis FTSLWMHGLLPPHSS-FPWW--
 QQREHETQQYEYALPVHPPPLPSQQT-LQPQKSG---Q
 Ornithorhynchus FNSLWMHGFLPPHSN-YPWL--
 SPRDQETQQYEYALPVHPPPRPSQRT-LQPQPK---Q
 Cobra FNSMWMHNFLPSHSS-FYLIRQRPQ-HETQQYEYTMPVHPPPLPS-
 QTPTLLQQPGIQDQ
 Thamnophis FNSMWMHNFLPSHSS-FYLIRQRPQ-HETQQYEYTMPVHPPPLPS-
 QTPTLLQQPGIQEQ
 Crotalus_horrid YHSMWMHNFLPSHSA-FYLIRQRPQ-DETQQYEYTMPVHPPPLPS-
 QTPTLLQQPGIQEQ
 Crotalus_mitche YHSMWMHNFLPSHSA-FYLIRQRPQ-HETQQYEYTMPVHPPPLPS-
 QTPTLLQQPGIQEQ
 Protobothrops YHSMWMHNFLPSHSS-FYLIRQRPQ-HETQQYEYTMPVHPPPLPS-
 QTTTLLQQPGIQEQ
 Vipera YHSMWMHNFLPSHSS-FYLIRQRPQ-HETQQYEYSMPVHPPPLPS-
 QTPTLLQQPGIQEQ
 Pantherophis FNSMWMHNFLPSHSS-FYLIRQRPQ-HETQQYEYTMPVHPPPLPS-
 QTPTLHQQPGIQEQ
 Boa FNSMWMHNFLPSHSS-FYLIRQRPQ-PETQQYEYSMPVHPPPLPS-
 QTPTLLQQPGIPEQ
 Python_mulurus FNSMWMHNFLPSHSS-FYLIRQRPQ-HETQQYEYSMPVHPPPLPS-
 QTTTLLQQPGIQEQ
 Ophisaurus FNSMWMHNFLPSHSS-
 FYWIKRRPQEHETQQYEYSMPVHPPPLPSQQTPTLLQQPGVIEQ
 Shinisaurus FNSMWMHNFLPSHSS-
 VYWMSRRPQEHGTQQYEYSMPVHPPPLPSQQTPTLLQQPGIQEQ
 Pogona FFPPWMHNHLPPHSS-
 FYWLRQRPQDHETQRYEYTMPVHPPPLPSQQTPTLLQRPGIPEQ
 Anolis FNSMWGRSFLPSHTF-
 LWMTQGGPQRQDTQQYEYAMPVHPPPLPSLQTPIQFAEPRLPEQ
 Gekko FH-
 MWMHNFLPSHSSPSFWGKRRLEHDTQQYEYSMPVHPPPLPSQQTPL--QPPGIQEQ
 MournGecko FH-
 MWMHNFLPSHSSPSFWGKRRLEHDTQQYEYSMPVHPPPLPSQQTPL--QPPGIQEQ
 Eublepharis FH-
 VWIHNFLPPHSSPPYWGKRRIHDHDTQQYEYTMPVHPPPLPSQQTPI--LHHGVQEQ
 Aspidoscelis FAPLWIRNFLRPQPS--YWIK-IPQ----
 QQYEYSLPVHPPPLPSQQTPTIPQAPGRQDN

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Allig_sinensis NPSLR-STLP--S-KQGQ-IQQNEVLPPVQVGQPPLQQGELPGI--
 QQLVPAEKQ--LQL
 Allig_mississip NPSLH-STLP--S-KQGQ-IQQNEVLPPIQVGQPSLQQGELPGI-
 QQLVPADKQ--LQL

Crocodilus_poro NPSLH-SMLP--S-KQGQ-IQQNDVLPPIQVGPPLQQGELPGI--
 QQLIPADKQ--LQL
 Gharial NPSLH-SMLP--S-KQGQ-IQQNEVLPPIHVGPPLQQGELPGI--
 QQLIPADKQ--LQL
 Caiman NPSLR-STLP--T-KQGQ-IQLNEALLPVQVGPPLQQGELPGI-
 QQQIPADKQ--LQL
 Tursiops KPFLQPTVVV--S-VQNT-VQKGIPQPPPIYPGHPPLQQSEGPMI--
 QQVAPSEKPSKTEL
 Sus KPFLQPTVVV--S-IQNP-VQKGVQPPPIYQGHPLQQVEGPMV-
 QQVAPSEKPPPEAEL
 Bos_taurus KPFLQPTVVV--S-MQNA-VQKGVQPPPIYQGHPLQQAEVPMV-
 EQVAPSEKPPPTTEL
 Ursus KPFLQSAIVT--D-IRDT-APKGGPQRPVYQVGPPLQQKEGPMI-
 EQVAPSDKPPKAEL
 Equus KAFLQPTIVT--SGIQDT-IQKGGHQPVPVYQVGPPLQQSEGPMV-
 QQVAPSDKPPKAEL
 Homo KPFLQSAAT--T-NQAT-ALKEALQPPHILGHLPLQEGELPLV-
 QQVAPSDKPPKPEL
 Cavia KHFFQPTATP--A-IQDT-PQKAGPQPPMHPRLPLKDAELPEA-
 HEQVAPTEMLNPEL
 Rattus KPFLQPTAAT--G-VQVT-
 PQKPGPHPPMHPGQLPLQEGELIAPDEPQVAPSENPPPTPEV
 Mus KPFLQPTAAT--G-VQVT-
 PQKPGPQPPMHPGQLPLQEGELIAPDEPQVAPSENPPPTPEV
 Monodelphis KSFLQSSPAP-----DA-AQHGVPPLPLNQEQSHMQPEDKGAG-
 QQPGLPLGNAGRPEL
 Ornithorhynchus NAFLPPTVAP--S-AQGPPAQNGDPQPPILHLQVPLQQEKEKPSV-
 QEQVAPPKRPPKPEL
 Cobra PHYHYAHFLP--T-RQVQ-IQHYDVQPPFHPKQFSPSEGNQLGV-
 QQQLS-LDRH-AQQL
 Thamnophis PHYHYAHFLP--T-RQVQ-MQHYDVQPPFHPKQFSPSEGNQPDV-
 QQQLS-LDRQ-AQQL
 Crotalus_horrid PPYHYTHFLP--T-RQVQ-IQHYDVQPAFQPKQFSPSEGNQPDV-
 QQQLS-LDRQ-TQQL
 Crotalus_mitche PPYHYTHFLP--T-RQVQ-IQHYDVQPAFQPKQFSPSEGNQPDV-
 QQQLS-LDRQ-TQQL
 Protobothrops PPYHYTHFLP--T-RQVQ-IQHYDVQPAFQPKQFSPSEGNQPDV-
 QQQLS-LDRQ-TQQL
 Vipera PPYHYTHFLP--T-RQVQ-IPHYDVQPAFQPKQFSPSEGNQPDV-
 QQQLS-LDRQ-TQQL
 Pantherophis PHYHYAHFLP--T-RQVQ-LQHYDVQPPFHPNQFSPSEGNQPDV-
 QQQLS-LDR----XL
 Boa PNHHYTHFIP--T-RQLQ-TQHYDVQPVFQPKQFSPSEGNPPDI-
 QQQLSPSDRQ-TQQL
 Python_mulurus PHYHYTHFIP--T-RQMQ-IQNYDVQPAFQPNQFSPSEGNQPDV-
 QQQPSPSDRQ-TQQL
 Ophisaurus HRYPFINLSP--T-RQVQ-LQQYDMQPPFQQNPYALPEGNQPVL-

QQQLPPPDRQ-TQQL
 Shinisaurus PHYSFTHLIP--T-RQVQ-LHRYDMQPPFQQNPFALPEGNQPVL-
 QQQLPPPDRQ-TQQL
 Pogona PHYQFTDLTP--T-MQAQ-LQQYEMQPPFQQ--
 TPLPEGNQPVVPQKKRPLDRQ-TQQ-
 Anolis PFFQITNLIP--T-RQVQ-IPRYAIQPSIQQ-
 TFQQVEAHPPVDPQQQPLPAERQ-THQ-
 Gekko FPFLLANQIPYTP-RQIQ-PQQYDMQPPFQQKPFLOPEGRHPVV--
 QQLQLPDRQ-MQQL
 MournGecko FPFLLANQIPYTP-RQIQ-PQQYDMQPPFQQKPFLOPEGRHPVV--
 QQLQLPDRQ-MQQL
 Eublepharis FPILVTNQIPFST-RQGQ-LQQYDIQPPFQQKLFAQQOEGHHPVV--
 QQLLPLDRQ--TQL
 Aspidoscelis PHYQLTNRIP--A-RQIQ-LQQYNF-----
 PFLQLEGNQPGL-----PSDRQ-NEQL

.

Allig_sinensis PAL-EYSGHLGQM-----
 MYPLVHQLVHQGPMQPPQOSA
 Allig_mississip PAL-EYSGHLGQM-----
 MYPIVHQLVHQGPMQPPQOPA
 Crocodilus_poro PAL-EYSGHLGQV-----
 MYPIVHQLVHQGPMQPPQOPA
 Gharial PAL-EYSGHLGQM-----
 MYPIVHQLVHQGPMQPPQOPA
 Caiman PAL-EYSGHLGQV-----
 MYPIVHQLVHQGPMQPPQOPA
 Tursiops PGM-NFADPQDPS-----MFPIA-
 RLISLGPVPQNKPPP
 Sus PGL-DFADPQDPS-----MFPIA-
 RLISQGPVPQDKPSP
 Bos_taurus PGM-DFADLQDPP-----MFPIA-
 HLISRGMPQNKPSQ
 Ursus PGM-DFADPEGPS-----VFQIA-
 RLISQGPMPQNKPSP
 Equus REM-DFPGPQDPQ-----MFPIA-
 RLIARGMPPNKQAP
 Homo PGV-DFADPQGPSLPGMDFPDQGPSLPLGLDFADPQGSTIFQIA-
 RLISHGMPQNKQSP
 Cavia PVL-DFADPQIPS-----VFQIA-
 RFVSRVPVPQNKPAM
 Rattus PIM-DFADPQFPT-----VFQIA-
 HSLSRGPMAHNKVPT
 Mus PIM-DFADPQFPT-----VFQIA-
 RSISRGPMAHNKASA
 Monodelphis PEM-DFAGQLGQS-----MFPMG-
 RLISQGPEQKAEKAP

Ornithorhynchus PAL-DFTVQLRQS-----
 IFPIAQKLISQGPRQKAEQSP
 Cobra PAIQDYSGTLSQ-----IYPGL-
 LGTQQNTGQQPQQQS
 Thamnophis PAIQDYSGTLGQ-----IYPGL-
 FGTQQNTAQQPQQRS
 Crotalus_horrid PVIQDYSGTLGQ-----IYPGL-
 FGTQQNTAQQPQQQS
 Crotalus_mitche PVIQDYSGTLGQ-----IYPGL-
 FGTQQNTAQQPQQRS
 Protobothrops PAIQDYSGTLGQ-----IYPGL-
 FGTQQNTAQQPQQRS
 Vipera PAIQDYLGTLGQ-----IYPGL-
 FGTQQNTAQQPQQRP
 Pantherophis PAIQDYSGTLGQ-----IYPGL-
 FGTQQNTAQQPQLQS
 Boa PAVQEYSGTLGQA-----IYPGL-
 FGTQQNSARQPQQRS
 Python_mulurus PAIQEYSFKNIM-----IYPGL-
 FGTQQNTAQQPQQRY
 Ophisaurus PAVQEYSGTLGQ-----IYPGL-
 HGTQQDPAQPPPQRS
 Shinisaurus PAVQEYSGTLGQA-----IYPGL-
 HGTQQDPAQPSQQQS
 Pogona -----IYLGL-
 HGNQQDQAQPPPQQS
 Anolis -----IYPAL-
 HGTQQDPSQQLQQQS
 Gekko S-FQEYLRTLGT-----IYPGL-
 LTTTPQDPVQQPQQQS
 MournGecko S-FQEYLRTLGT-----IYPGL-
 LTTTPQDPVQQPQQQS
 Eublepharis P-FQEYSATLGQA-----IYPSL-
 LGTPQEPVQQPQQRS
 Aspidoscelis PAIQEYLGTLGQ-----
 RGPQQDLVQQPQQQP

Allig_sinensis LHPALFYMSYAANQGG-APARL-
 GIVSSEEMLGRRGGVPAYGAMIP-----GFRGMPQ
 Allig_mississip LHPALFYMSYAANQGG-APARL-
 GIVSSEEMLGRRGGVPAYGAMIP-----GFRGMPQ
 Crocodilus_poro LHPALFYMSYGANQGG-APARL-
 GIVSSEEMLGRRGGAPAYGAMIP-----GFRGMPQ
 Gharial LHPALFYMSYAANQGG-APARL-
 GIVSSEEMLGRRGGAPAYGAMIP-----GFRGMPQ
 Caiman LHPALFYMSYAANQGG-APARL-

GIVSSEEMLGRRGGVPAYGAMIP-----GFRGMPQ
Tursiops LYPGIFYMSYGANQLN-APARL-
GIMSSEEMAGGGGGPMAYGAMFPGFGGMRPGLGGMPP
Sus LYPGMFYMSYGANQLN-SPARL-
GILSSEEMAGRRGGPLAYGAMFPGFGGMRPNLGGMPP
Bos_taurus LYPGIFYVITYGANQL-----
GGRGDPLAYGAIFFPGFGGMRPRLGGMPH
Ursus LYPGIFYMSYGANQLN-APGRL-
GIMSSEEMAGRRGGPMAYGAMFPGFGGMRPNLGGMPH
Equus LYPGLFYLTYGANQLN-TPGRL-
GIMSSEEMAGRRGGPMAYGAMFPGFGGMRSSLRGMP
Homo LYPGMLYVPPFGANQLN-APARL-
GIMSSEEVAGGREDPMAYGAMFPGFGGMRPGFEGMPH
Cavia LYPGMVYMSYGTNQL-----
GGRVAPVTYGGLLPGLTGVRHTIRRVPQ
Rattus FYPGMFYMSYGANQLN-APARI-
GFMSSEEMPGERGSMPMAYGTLFPYGGFRQTLRGLNQ
Mus FYPGMFYMSYGANQLN-APARI-
GFMSSEEMPGERGSMPMAYGTLFPRFGGFRQTLRRLNQ
Monodelphis LDPGMFYMPYGANRLN-APARF-
GLLSSEEMMGGRGTPMGYAMFP---GMKSGFGGMPP
Ornithorhynchus LYPELVYVPPFGANQQNAAPARL-
GKVSSEEMPGGGGEPLAYGSIFPGFGSMRPGFGAMQI
Cobra IYPNLQYMSYVANKG--APTRL-
GIVSSEEMQGGGFGAPAYRAAGPHGFPMDFRFGNMPL
Thamnophis IYPNLQYMSYVANKG--VPTRL-
GIVSSEEMQGGGFGAPAYQATGPHGFPIDFRFGNMPL
Crotalus_horrid IYPNLQYMSYVANKE--APARL-
GIVSSEEMQGGGFGAPAYRAAGPHVFPMDARFNGMPL
Crotalus_mitche IYPNLQYMSYVANKG--TPARL-
GIVSSEEMQGGGFGAPAYRAAGPHVFPMDARFNGMPL
Protobothrops IYPNLQYMSYVANKG--APARL-
GIVSSEEMQGGGFGAPAYRAAGPHVFPMDARFNGMPL
Vipera IYPNLQYMSYVANKG--APTRL-
GIVSSEEMQGGGFGAPAYRAAGPHVFPMDARFNGMPL
Pantherophis IYPNLQYMSYIANKG--VPARL-
GIVSSEEMQGGGFGAPAYRAAGSHGFPMDFRFGNMPL
Boa IYPNLQYMSYIANQG--APTRL-
GVVSSEEMQGGGFGAPAYRAAGPHLFPMDARFNGIPL
Python_mulurus IYPSLQYMSYVANQG--APTGL-
GIVSSEEMQGGGFGAPAYRAAGPHLFPMDARFNGMPL
Ophisaurus MYPSLYYLPYVANQGG-APARL-
GIVSSEEMQGGGLGAPAYRAGGNLFPNTRFVNMPQ
Shinisaurus MYPSLYYMPYIANQGG-APARL-
GIVSSEEMQGGGLGAPAYRAASPDLFAMDARFNGMPL
Pogona IYPNLYYMPYVANQGA-APGRL-
GIVSSEEMQGGGFGPPAYQAPGPDFATDARLRHMAL

Anolis IYPSLYYMPYVANQGA-APARQ-
 GIVSSEEMQGGGFGAPAYRAPGPDFLFAMDTRFGNSPL
 Gekko IYPSMYYLSYAANQGA-APATL-
 GIVSSEEMQGGGLGAPAYRAMSPDLFMSGAGFGSPPQ
 MournGecko IYPSMYYLSYAANQGA-APATL-
 GIVSSEEMQGGGLGAPAYRAMSPDLFMSGAGFGSPPQ
 Eublepharis IYPSLYYMPYVANQGA-
 APGRLGGIVSSEEMQGGGLGAPAYRAMSPDFFGMSAGFGNPPP
 Aspidoscelis VHPNLYYMSYVANQGG-APARL-
 GIVSSEEMQGGGFGAPAYQAMSPDVFAMNAGFGNMKP

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Allig_sinensis DP-ALQGDFTTEDDNP-
 ATAHNPAIQGGANQGSPSRGSQFPAVNPAGHGSA-ILLPEGIPA
 Allig_mississip DP-ALQGDFTTEDDNP-
 ATAHNPAIQGGANQGSPSRGSQFLAVNPAGHGSA-ILLPEGIPA
 Crocodilus_poro DP-ALQGDFTTEDDNP-
 ATAHNPAFQGGANQGSPSRGSRFPALNPAGHGSA-ILFPEGTPA
 Gharial DP-ALQGDFTTEDDNP-
 ATAHNPAFQGGANQGSPSRGSRFPALNPAGHGSA-IFLPEGTPA
 Caiman DP-ALQGDFTTEDDNP-
 ATAHNPAIQGGANQGFSRGSRFPVAVNRAGHGSA-ILLPDGTPA
 Tursiops NP-AMGGDFTLEFDSPAAGTKGPEKGEQGAQDP----
 PVPEANPADLENP-ALLSELAPG
 Sus NS-AKGGDFTLEFDSPAAGTKGPEKGEQGAEGS----
 PVAEANTADPESP-ALFSEVASG
 Bos_taurus NP-DMGGDFTLEFDSPVAATKGPEKGEQGAQDS----
 PVPEAHLADPESP-ALLSELAPG
 Ursus NP-AMGGDFTLEFDSPVAGTKGPEKGEQGAQGS----
 PMPDGD PANLENP-DLLPGVAPG
 Equus NP-AMGGDFTLEFDSPVAATKGPEKGEQGPQGS----
 PAKEADEANPENQ-ALLSEIASG
 Homo NP-AMGGDFTLEFDSPVAATKGPENEEGGAQGS----
 PMPEANPDNLENP-AFLTELEPA
 Cavia DP-TMAGDFTLEFDTP-AATKGPEKGEQGAQGS----
 PLHETKGEDPENA-ALLSQIAPG
 Rattus NS-PKGGDFTVEVDSPVSVTKGPEKGE-GPEGS----
 PLQEASPKGENP-ALLSQMAPG
 Mus NS-PKGGDFTVEVDSPVSVTKGPEKGE-GPEGS----
 PLQEANPGKREN-ALLSQMAPG
 Monodelphis NP-AMGGDFTLEHDQPTGGNKSPGVAEGGAQDS----
 PGPKNPKNLEKP-AFLPEEIPW
 Ornithorhynchus NP-ALGKDFTLEDDSP-TVAGKPPGQGGEVLS----
 PRDGAIPAGHPNP-GLLPERISR
 Cobra NN-GQPGDYTVEDDQL-GITEQPEVPKGVKLG-----
 NPPNRGNN-VIPVD---I

Thamnophis NR-GQPGDYTVEDDQL-GITEQPEVPKGANPGP-----
 NPLDRGNN-VIPVD---I
 Crotalus_horrid NR-GQPGDYTVEDDQL-GITEQPEVQKGSNLGP-----
 NPSDRGNT-LIPVD---S
 Crotalus_mitche NR-GQPGDYTVEDDQL-GITEQPEVQKGSNLGP-----
 NPSDRGNT-LIPVD---S
 Protobothrops NR-GQPGDYTVEDDQL-GITEQPEVQKGSNRGP-----
 NPSDRGNN-LIPVD---S
 Vipera NR-GQPGDYTVEDDQL-GITEQPEVQKGSNLGP-----
 NPSDRGNN-VIPVD---S
 Pantherophis NR-GQPGDYTVEDDQL-GITEQPKVPKGANLGP-----
 NPPDRGND-VIPVD---I
 Boa NR-GQPGDYTVEDDQL-GITEQPEVQGGANLGS-----
 NPSSRGNN-VIPVD---G
 Python_mulurus NR-GQPGDYTVEDDQL-GITEQPEVQGGANLGS-----
 NPSGRGNN-VIPVD---G
 Ophisaurus NI-GQPGDYTVEDDQL-GITEQPELOGGANLGA-----
 NPSAKRNN-GIPLD---G
 Shinisaurus NR-GQPGDYTVEDDQL-GITEQPEVQGGANLGA-----
 NPSGKGNN-VIPLD---G
 Pogona N---QPGDYTVEDDQL-GITEQPDVKGGANVGA-----
 NPAGKGNP-ISPLE---G
 Anolis N---QPGDYTVEDDTL-GITEQPDVKGGANAGA-----
 NPSGKGNN-AVLLD---G
 Gekko NRLGQPGDYTVEDDQL-GITEQPEVQGGAKQAA-----
 NPSGNGNNVVVSVNG--N
 MournGecko NRLGQPGDYTVEDDQL-GITEQPEVQGGAKQAA-----
 NPSGNGNNVVVSVNG--N
 Eublepharis NRLGQPGDYTVEDDQL-GITEQPDVQGGANPAA-----
 NPSGNGNS-VVSLN---N
 Aspidoscelis RI-GQPGDYTVEDDQL-GITEQPDVQGGVNMGP-----
 NPPQTGNN-MNPID---G

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Allig_sinensis GQE-GFLPNI--NDMPGQGVNPVGQ-RGTLG-
 VTPTATAPELTQGIPDSFMTFG-AEGTV
 Allig_mississip GQE-GFLPNI--NDMPGQGVNPVGQ-RGTLG-
 VTPTATAPELTQGIPDSFMTFG-AEGTV
 Crocodilus_poro GQE-GFLPNI--NDMPGQEVNPVGQ-RGTLG-
 VTPTAAAPELTQGIPDSFMPFG-AEGTV
 Gharial GQE-GFLPNI--NNMPGQEVNPVGQ-RGTLG-
 VTPTAAAPELTQGIPDSFMPFG-AEGTV
 Caiman GHE-GFLPNI--NDMPGQGVNPVGQ-RGTPE-
 VTPTATAPELTQGIPDSFMTFG-AEGTV
 Tursiops ALG-GLLANP-KGNIPNLARGPAGQSRGPLR-
 VTPAAADPLMTPGLADVYETYS-ADET'T

Sus VLG-GLLANP-KGKIPNLARGPAGRSRGPPG-
 VTPADADPLMTPGLADAYETYG-ADETT
 Bos_taurus ALE-GLLANP-
 EGNIPNLARGPAGRSRGFLRGVTPAAADPLMTPGLAEVYETYG-ADETT
 Ursus ALG-GLLAHP-KDDEPGLARGPAGQSGGPPR-
 VTPADADPLMTPGLADLYETYG-ADVTT
 Equus PLG-GLLALP-KGSVPNLARGPAGQSRGPPR-
 VTPAAADPLMTPGLAEAYETYG-ADVTT
 Homo PHA-GLLALP-KDDIPGLPRSPSGKMKGLPS-
 VTPAAADPLMTPPELADVIRTYD-ADMTT
 Cavia AHT-GLFGFP-NDNVPSMARGPSGHRNRPLE-
 VTPVTADPLITPELAEIYETYG-GDVTT
 Rattus AHA-GLLAFP-NDHIPNMARGPAGQR--LLG-
 VTPAAADPLITPELAEVYETYG-ADVTT
 Mus AHA-GLLAFP-NDHIPSMARGPAGQR--LLG-
 VTPAAADPLITPELAEVYETYG-ADVTT
 Monodelphis AQG-GILSFP-KGRISLGGGPAGQVKGFLR-
 GTSPTPESGITPGPSDITETFG-TDITT
 Ornithorhynchus LRSGAALTFP-SDFIPHRGQGPAGQSKLPPG-
 VTPPPADPLMTPGPSDPLEFFE-GDGT
 Cobra NPR-DALPNA-NSNL----LNPAGQSKGQPN-APQATALPPAI---
 PDSFIPLEASSTPM
 Thamnophis NPR-VALPNA-NNNL----LNPAGQSKGQPN-APQATALPPVT---
 PDSFIPLEATSTPM
 Crotalus_horrid NPR-VALPNA-HNNL----LNPAGQSKGQPN-APQATVLPPAI---
 PDSFTPLEATSTPM
 Crotalus_mitche NPR-VALPNA-HNNL----LNPAGQSKGQPN-APQATVLPPAI---
 PDSFTPLEATSTPM
 Protobothrops NPR-VALPNA-HNNL----LNPAGQSKGQPN-APQATALPPAI---
 PDSFTPLEATSTPM
 Vipera NPR-VALPNA-HNNL----LNPAGQSKGQPN-APQATTLPPIAI---
 PDSFTPLEATSSPM
 Pantherophis NPR-VALPNA-NNNL----LNPAGQSKGQPN-APQATALPPAT---
 PDSFTPLEATSIPM
 Boa NPG-VALPNA-NNNL----LNPAGQSKGQPG-APQATALPPAT---
 HDSFIPLEAADTAM
 Python_mulurus NLG-VALPNV-NNNL----LNPAAQSKGQPS-APQATALPPAT---
 HDSFIPLEAADTAM
 Ophisaurus NQG-GAVPNA-NSNL----LNPAGQSKGQTG-
 AAQATIIPLATQGFPPDSFLPLDAADPTM
 Shinisaurus SQG-GAVPNG-NSNL----FNPAGQSK-----
 AQATVNPLVTQGLPDSFIPLDAADTAM
 Pogona NPAIGASPNA-NSYL----LHPAGQSKGPLG-
 EPQATGGPLAPEGLP----VVDAAGTAM
 Anolis TQG-GALPNA-NSHL----FSPAGQSQGLSG-LAQATAAPHATQG---
 PFLPLDAADPSM
 Gekko NPG-GALS---NSNL----MNPAGQSKGPGG-

MPQATVNPLATQGLPDSFIPFE-ADTPM
MournGecko NPG-GALS---NSNL----MNPAGQSKGPGG-
MPQATVNPLATQGLPDSFIPFE-ADTPM
Eublepharis NLG-GALSNA-NSNL----MNPAGQSQGPAG-
GLQATVNPLVTQGLPDSFVPE-ADTLM
Aspidoscelis QQG-GTLLNA-NSNL----QNSLAQSKGLLG-
AAQVTANPLATQGLPDTFLPFG-ADTT-

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Allig_sinensis PLGIQKEVTVEPTMFPPEAQHTLMAGNGAEQPQVMQDVWHFQEP
Allig_mississip PLGIQKEVTVDPTMFPPEAQHTLMAGNGAEQPQVMQDVWHFQEP
Crocodilus_poro PLGIQKEVTVDPTMFPESQRTLMAGNGAEQPQVMQDAWHFQEP
Gharial PLGIQKEVTVDPTMFPESQHTLMAGNGAEQPQVMQDAWHFQEP
Caiman PLGIQKEVTADPTMFPPEAQHTLMAGNGAEQPQVMQDVWHFQEP
Tursiops TLGLQEETTVDSTVTPDSQHTSMPGNKAQQPQIKHDAWHFQEP
Sus TLGLQEEMTMDSTATPYSEHTSMPGNKAQQPQIKRDAWRFQEP
Bos_taurus TLGLQEETTVDSTATPDTQHTLMPRNKAQQPQIKHDAWHFQEP
Ursus PL---EETPTDTTAVPDTQOTLMPESKAQQPQIMHDVWHFQEP
Equus PLDFEETTTDTTVTPESPQTSMPGNEAEQPQMVHDAWRFQEP
Homo SVDFQEEATMDTMAPNSLQTSMPGNKAQEPMMHDAWHFQEP
Cavia PLG---EATMETMTPTDTPQTPMPGNKVRQPQMVHEPWVWHFQEP
Rattus PLG-DGEATMDITMSPDTQQPPMPGNKVHQPQV-HNAWRFQEP
Mus PLG-DGEATMDITMSPDTQQLLPGNKVHQPQV-HNAWRFQEP
Monodelphis PLGMLLEEGPLDITIEPDTHTSVQGNESQQPQIMQDVWHFQEP
Ornithorhynchus PLGLQREALDITMTPDTQSTYMPGNEAQQMQVTQDQWQFQEP
Cobra PL-----DPTMFPDSFYSTSAGNEAGQPQVIQSSWHLQEP
Thamnophis PL-----DPTMFPDSFYSTSAGNEAGQPQVSQSSWHLQEP
Crotalus_horrid PL-----DPTMFPDFFYSTSAGNEPGQPQVSQSSWHLQEP
Crotalus_mitche PL-----DPTMFPDFFYSTSAGNEPGQPQVSQSSWYLQEP
Protobothrops PL-----DPTMFPDFFYSTSAGNEPGQPQVSQSNWHLQEP
Vipera PL-----DPTMFPDFFYSTSAGNEPGQPQVSQSSWHLQEP
Pantherophis PL-----DPTIFPDFFYSTSAGNEAGQPQVSQSSWYLQEP
Boa PL-----DPTMFPDSFFSTTSAGNEVGQPQVSQNSWHFQEP
Python_mulurus PL-----DPTMFPDSFYST-GGNEAGQPQLSQNSWHFQEP
Ophisaurus PL-----DPTMFPDAIYTTNAVNEAGQPQVQDIWHFQEP
Shinisaurus PL-----DPTMFPDAIYTTNVGNEAGQPQVQDVWHFQEP
Pogona PL-----DPTTFPDTMFPDVGNGAGLSPIGQDMWHFQEP
Anolis PL-----DATMFPD-LYTSNVGNEAGLAQVGQDAWHFQEP
Gekko PL-----DPTMYPDAIYTAQAGNEVGRPQIGQDGHWHFQEP
MournGecko PL-----DPTMYPDAIYTAQAGNEVGRPQIGQDGHWHFQEP
Eublepharis PL-----DPTMSPDAIYTPQTGYEAGQP---QDGHWHFQEP
Aspidoscelis -----DPTMLPDAMATT---NVAGYPQVGQDMWHFQEP

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Mammal+Reptiles-AMBNseqs-CDS-Aln.txt

PAL2NAL output

CLUSTAL W multiple sequence alignment

Allig_sinensis

Allig_mississip

Crocodilus_poro

Gharial

Caiman

Tursiops

ATG-----

Sus

ATG-----

Bos_taurus

ATG-----

Ursus

ATG-----

Equus

ATG-----

Homo

ATG-----

Cavia

ATG-----

Rattus

ATG-----

Mus

ATG-----

Monodelphis

ATG-----GCCAGGGAACAG

Ornithorhynchus

ATGATCCCTCTAATAGTCGCACAGGTCGGGGCCCAGGGAGCCATCCTAAGCTCAGAGGAA

Cobra

Thamnophis

Crotalus_horrid

Crotalus_mitche

Protobothrops

Vipera

Pantherophis

Boa

Python_molurus

Ophisaurus

Shinisaurus

Pogona

Anolis

Gekko

MournGecko

Eublepharis

Aspidoscelis

ATGAAA-----

Allig_sinensis

Allig_mississip

Crocodylus_poro

Gharial

Caiman

Tursiops

Sus

Bos_taurus

Ursus

Equus

Homo

Cavia

Rattus

Mus

Monodelphis
AACGTA-----

Ornithorhynchus

CTGATCTTCACTGGGCTATTCATCCAGCCTCTAGCCCCTGGAAGAATGGCCCCTATAGGT

Cobra

Thamnophis

Crotalus_horrid

Crotalus_mitche

Protobothrops

Vipera

Pantherophis

Boa

Python_mulurus

Ophisaurus

Shinisaurus

Pogona

Anolis

Gekko

MournGecko

Eublepharis

Aspidoscelis

Allig_sinensis

Allig_mississip

Crocodilus_poro

Gharial

Caiman

Tursiops

Sus

Bos_taurus

Ursus

Equus

Homo

Cavia

Rattus

Mus

Monodelphis

GAAAAAAGAAGAGAAGACTCAGTACAGAGTCTT-----GGAGTACTCCCT

Ornithorhynchus

CAGGACAATCCAGAAGATCAGGACCAGGTTCTACCAACAGGACAAAGTGGCATGAGCCCT

Cobra

Thamnophis

Crotalus_horrid

Crotalus_mitche

Protobothrops

Vipera

Pantherophis

Boa

Python_mulurus

Ophisaurus

Shinisaurus

Pogona

Anolis

Gekko

MournGecko

Eublepharis

Aspidoscelis

Allig_sinensis

Allig_mississip

Crocodylus_poro

Gharial

Caiman

Tursiops

Sus

Bos_taurus

Ursus

Equus

Homo

Cavia

Rattus

Mus

Monodelphis

CCATTGACGAGGTCT-----

Ornithorhynchus
GCCACCCAGGACCCCCCAGAAGACCAGCCCCCGACTGCCAGTGGCTTGCTGGATGAGTCT
Cobra

Thamnophis

Crotalus_horrid

Crotalus_mitche

Protobothrops

Vipera

Pantherophis

Boa

Python_mulurus

Ophisaurus

Shinisaurus

Pogona

Anolis

Gekko

MournGecko

Eublepharis

Aspidoscelis

Allig_sinensis

Allig_mississip

Crocodilus_poro

Gharial

Caiman

Tursiops

Sus

Bos_taurus

Ursus

Equus

Homo

Cavia

Rattus

Mus

Monodelphis

CTTGACTGGTATCTCCAGGCTCTGGGA-----ACAAGGCTCAAG

Ornithorhynchus

GAGGTCACATTACCTGCCAACCTACAAGGGGTCTCGCTGACGACTGAGGAGAGCACCACC

Cobra

Thamnophis

Crotalus_horrid

Crotalus_mitche

Protobothrops

Vipera

Pantherophis

Boa

Python_mulurus

Ophisaurus

Shinisaurus

Pogona

Anolis

Gekko

MournGecko

Eublepharis

Aspidoscelis

Allig_sinensis -----

ATGAATGTCTGGATGCTG---ATGTTATGCCTC

Allig_mississip -----

ATGAATGTCTGGATGCTG---ACGTTATGCCTC

Crocodilus_poro -----

ATGAATGTCTGGATGCTG---ACGTTATGCCTC

Gharial -----

ATGAATGTCTGGATGCTG---ACGTTATGCCTC

Caiman -----

ATGAATGTCTGGATGCTG---ACGTTATGCCTC

Tursiops

CCAGCATTGAAGATCCCACTTTTCAAATGAAGGACATGATACTG---ATCCTGTGCCTC

Sus

CCAGCATTGAAGATTCCACTTTTCAAATGAAGGACATGGTACTG---ATCCTGTGCCTC

Bos_taurus

CCAGCATTGAAGATCCCACTTTTCAAATGAAGGACATGATACTG---ATCCTGTGCCTC

Ursus

TCAGCATTGAAGATCCCACTTTTCAAATGAAGGACCTAATACTG---ATCCTATGCCTC

Equus

CCAGCATTGAAGATCCCGCTTTTCAAATGAAGGACTTGGTACTG---ATCCTGTGCCTC

Homo

TCAGCATCTAAGATTCCACTTTTCAAATGAAGGACCTGATACTG---ATCCTATGCCTC

Cavia

TCACCGTCTAAGATTCCACTCTTCAAATGAAGGACCTGATGCTG---TTCCTGTCCCTC

Rattus

TCAGCATCTAAGATTCCACTTTTCAAATGAAGGGCCTGCTCCTG---TTCCTGTCCCTA

Mus

TCAGCATCTAAGATTCCACTTTTCAAATGAAGGGCCTGATCCTG---TTCCTGTCCCTA

Monodelphis

CCAGTGGTGAAGAAATCACTTTTTAAAATGAAGGACTTGCTACTG---ATGCTGTGCCTT

Ornithorhynchus

GAGGAACCAAGGGTCTACTCTTAAAATGGAGAATTTGGTTCTA---ATCCTGTCCCTC

Cobra -----

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Thamnophis -----

ATGAAACAATGGACATTT---GTCTTATGCCTT

Crotalus_horrid -----

ATGAAACAATGGATATTT---GCGTTATGCCTT
 Crotalus_mitche -----
 ATGAAACAATGGATATTT---GCGTTATGTCTT
 Protobothrops -----
 ATGAAACAATGGATATTT---GCATTATGCCTT
 Vipera -----
 ATGAAACAATGGATATAT---GTGTTATGCCTT
 Pantherophis -----
 ATGAAACAATGGACATTT---GTCTTATGCCTT
 Boa -----
 ATGAAACAATGGATATTT---GTCTTATGCCTT
 Python_mulurus -----
 ATGAAACAATGGATATTT---GTCTTATGCCTT
 Ophisaurus -----
 ATGAAACAATGGATACTT---GTCTCATGCCTC
 Shinisaurus -----
 ATGAAACAATGGATACTTGTGTCTCATGCCTC
 Pogona -----
 ATGAAACAATGGATACTT---GTCTCGAGCCTA
 Anolis -----
 ATGAAACAATGGATGCTT---GTCTCCAGCCTC
 Gekko -----
 ATGAAACGATGGATACTT---GTCTCCTGTCTG
 MournGecko -----
 ATGAAACGATGGATACTT---GTCTCCTGTCTG
 Eublepharis -----
 ATGAAACGATGGATACTT---GTCTCGTGCTTA
 Aspidoscelis -----
 GATCTGAAGCAATGGATTCTT---TTTTCATGGCTA

 Allig_sinensis CTAGGCACAGGGTTTGCTTTGCCA-----
 ATGTACCCTCAGCATACTGGGACA---
 Allig_mississip CTAGGCACAGGGTTTGCTTTGCCA-----
 ATGTACCCTCAGCATACTGGGACA---
 Crocodilus_poro CTAGGCACAGGGTTTGCTTTGCCA-----
 ATGTACCCTCAGCATACTGGGACA---
 Gharial CTAGGCACAGGGTTTGCTTTGCCA-----
 ATGTACCCTCAGAATACTGGGACA---
 Caiman CTAGGCACAGGGTTTGCTTTGCCA-----
 ATGTACCCTCAGCATACTGGGACA---
 Tursiops CTGAAAATGAGTTCTGCAGTGCCG-----
 GTGTTTCCTCAGCAACCTGGGACA---
 Sus CTGAAAATGAGTTCTGCAGTGCCG-----
 GCATTTCCCTCGGCAACCTGGAACC---
 Bos_taurus CTGAAAATGAGTTCTGCAGTGCCG-----
 GCGTTTCCTCAGCAACCTGGGATA---
 Ursus CTGGGAATGAGTTCTGCAGTGCCA-----

GTGTTTCCTCGGCAACCTGGGACT---
Equus CTGGAATGGGTTCTGCGGTGCCG-----
GCGTTTCCTCGGCAGCCTGGGATA---
Homo CTGGAATGAGTTTGCAGTGCCG-----
TTCTTTCCTCAGCAATCTGGAACA---
Cavia CTGAAAATAAGCTTGCAGTGCCG-----
GCATTTTCCTCAGCAACCAGGAGCACCA
Rattus GTGAAAATGAGCCTCGCCGTGCCG-----
GCATTTTCCTCAACAACCTGGGGCTCAA
Mus GTGAAAATGAGCCTCGCCGTGCCG-----
GCATTTTCCTCAACAACCTGGGGCTCAA
Monodelphis
TTGGGAACAAGTTTTGCAGTGCCAATAAAACAGGTATATCCTCAACAAGCTGCAGCA---
Ornithorhynchus TTTGGCACAAGTTTGGCCATACCG-----
GTCTTTCTGCAGCCGGGTGGACCT---
Cobra TTAGGAACATGTTCTGCTTTGCCG-----
ATACTGCCTCGTCATGCTGGGATT---
Thamnophis TTAGGAACATGTTCTGCTTTGCCG-----
GTACTGCCTCGTCATGCTGGGATT---
Crotalus_horrid TTAGGAACATGTTCTGCTTTACCG-----
ATACTGCCCCATCATGCTGGGATT---
Crotalus_mitche TTAGGAATATGTTCTGCTTTACCG-----
ATACTGCCCCATCATGCTGGGATT---
Protobothrops TTAAGAACATGTTCTGCTTTACCG-----
ATACTGCCCCATCATGCTGGGATT---
Vipera TTAGGAACATGTACTGCTTTACCG-----
ATACTGCCCCATCATGCTGGGATT---
Pantherophis TTAGGAACATGTTCTGCTTTGCCG-----
ATACTGCCTCGTCATGCTGGGATT---
Boa TTAGGAACATGTTCTGCTTTGCCG-----
ATACTGCCTCGTCATGCTGGGATT---
Python_mulurus TTAGGATCATGTTCTGCTTTGCCG-----
ATACTGCCTCGTCATGCTGGGATT---
Ophisaurus TTAGGAATATGTTCTGCTCTGCCG-----
ATTCTACCTCAACATGCTGGGATT---
Shinisaurus TTAGGAATATGTTCTACTCTGCCG-----
ATTCGTCCCTCAGCATGCTGGGATT---
Pogona TTAGGAATATGTTCTGCTCTGCCG-----
ATACTTCCTCAACATGCTGGGATA---
Anolis TTAGGAATATGTTCTGCTCTGCCG-----
CTATTCCCTCAGCATGCCGGGATA---
Gekko TTAGAAATATGCTCTGCTATGCCG-----
ATACTTCTTCAGCACAGTGGGATA---
MournGecko TTAGAAATATGCTCTGCTATGCCG-----
ATACTTCTTCAGCACAGTGGGATA---
Eublepharis TTAGGAATATGCTCTGCTATGCCG-----
ATGCTTCCTCAACACCCTGGGATA---

Pantherophis -----
 CCTGGAATGGGTAGTATAAGTCCTTGAGTTTACAAGACACATCGGTGGT
 Boa -----
 CCTGGAATGGGTAGTATAAGCCTTGAGGGTATGAGACAACCTTGGTGGA
 Python_mulurus -----
 CCTGGAATGGGTAGTATAAGCCTTGAGATGATGAGAAAGTTGGGTGGA
 Ophisaurus -----
 CCTGGACTTGGTAGTATAAGCCTGGAGAGATTGAGGCAATTTGGTAGA
 Shinisaurus -----
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 Pogona -----
 CCTGGATTAGGTAGCATAAGCCTTGAGACAATGAGACAAATGGGTGGA
 Anolis -----
 CCTGGAATGGGTAGTATTAGTCTTGAGAGGACAAGACAACCTTGGTGGT
 Gekko -----
 CCTGGAATAGGTAGTATAAGCCTTGAGNNNNNNNNNNNNNNNNNNNNNNNN
 MournGecko -----
 CCTGGAATAGGTAGTATAAGCCTTGAGNNNNNNNNNNNNNNNNNNNNNNNN
 Eublepharis -----
 CCTGGAATGGGTAGTATAAGCCTTAAGNNNNNNNNNNNNNNNNNNNNNNNN
 Aspidoscelis -----
 NNN

Allig_sinensis ---CAAACATGAACATGCTTCCACAG---TATGGTCGG---
 TACGACTATGGTGAACCA
 Allig_mississip ---CAAACATGAACATGCTTCCACAG---TATGGTCGG---
 TACGACTATGGTGAACCA
 Crocodilus_poro ---CAAACATGAACATGCTTCCACAG---TATGGTCGA---
 TACGACTACGGTGAACCA
 Gharial ---CAAACATGAACATGCTTCCACAG---TATGGTCGA---
 TACGACTACGGTGAACCA
 Caiman ---CAAACATGAACATGCTTCCACAG---TATGGTCGG---
 TACGACTATGGTGAACCA
 Tursiops TTGCAGGGGTTAAACATGCTTTCTCAG---TATTCAAGA---
 TTTGGCTTTGGGAAATCA
 Sus TTGCAGGGACTAAACATGCTTTCTCAG---TATTCAAGA---
 TTTGGCTTTGGGAAATCA
 Bos_taurus CTGCAGGGATTAAACCTGCTTTCTCAG---TATTCAAGA---
 TTTGGCTTTGGGAAATCA
 Ursus TTGCAGGGATTAAACATGCTTTCTCAG---TATTCAAGA---
 TTTGGTTTTGGAAAATCA
 Equus TTGCAGGGATTAAACATGCTCTCTCAG---TATTCAAGA---
 TTCGGCTATGGGAAATCA
 Homo CTGCAGAGATTAAACACACTTTCTCAG---TATTCTAGA---
 TACGGCTTTGGAAAATCA
 Cavia CTTCAAGGATTAAACGCACTTTCTCAG---TATTCTAGG---
 TTTGGTTTTGGAAAATCA

Rattus TTGCAGGGGCTCAACGCACTTTCTCAG---TATTCTAGA---
CTTGGCTTTGGAAAAGCA
Mus TTGCAGGGACTCAACGCACTTTCTCAG---TATTCTAGA---
CTTGGCTTTGGAAAAGCA
Monodelphis CTGAATGGATTGAATCTACTTTCTCAG---TTCTCTAGG---
TTTGGTTATGGCAAACCG
Ornithorhynchus -----TTGAACTTGCTTCCACAG---TTCTCTAGA---
TTTGGTTTTGGAAAGCAG
Cobra CCAAGTATACCAAAGGTA CTCCCTCAG---
TATGGCCAGACATACAGCTACGCTGATCCA
Thamnophis CCAAATGTACCCAAGGTA CTCCCTCAG---
TATGGCCAGACTTACAGCTACGCTGATCCA
Crotalus_horrid CCAAGTATATCAAAGGTA CTCCCTCAG---
TATGGCCAGACTTACAGCTACGCTGATCCA
Crotalus_mitche CCAAGTATATCAAAGGTA CTCCCTCAG---
TATGGCCAGACTTACAGCTACGCTGATCCA
Protobothrops CCAAGTATATCAAAGGTA CTCCCTCAG---
TATGGCCAGACTTACAGCTACGCTGATCCA
Vipera CCAAGTATATCAAAGGTA CTCCCTCAG---
TATGGCCAGACTTACAGCTACGCCGATCCA
Pantherophis
TTATGGGTACCTCAGGCTAACCCAAGACTGTATGGCCAGACTTACAGCTATGCTGATCCA
Boa CCAAGTATACCAAATATATTTCCCCCAG---
TATGCCCAGACTTATAGCTATGCTGATCCA
Python_mulurus CCAGGTATTCACAAGAAGATGTAACA---
TATGCCCAACCTTATAGCTATGCTGATCCA
Ophisaurus CCTAATATGCCAAATGTA-----CAG---
TATGCTCAGCCTTATACCTACAATGATCCA
Shinisaurus CCTAATATGCCAAATGTA CTCCACAG---
TATGCTCAGCCTTACACCTATGCTGATCCA
Pogona CGCAACGGACCTAATGCTCTCTCACAG---
TATGCCATGCCTTACAGCTATGGTGATTTA
Anolis TTAAACATACCTCCTGCTGTCCCACAG-----
GCTTTGCCTTATAGCTATGCTGATCCA
Gekko NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN---
TATGCTCGGCACTATACCTATGCTGATCCA
MournGecko NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN---
TATGCTCGGCACTATACCTATGCTGATCCA
Eublepharis NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN---
TATGCTCGGCACTATAGTTACTCTGATCCG
Aspidoscelis NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN---CTT-----
TACACTTACGCAGATCCG

Allig_sinensis
TTTAATTCAGTCTGGCTGCATGGTCTTCTCCCACCACACTCTTCA---TTTCCATGGTTA
Allig_mississip
TTTAATTCAGTCTGGCTGCATGGTCTTCTCCCACCACACTCTTCA---TTTCCATGGTTA

Crocodylus_poro
TTTAATTCAGTCTGGCTGCATGGTCTTCTACCACCACACTCTTCA---TTCCATGGTTA
Gharial
TTTAATTCAGTCTGGCTGCATGGTCTTCTCCCACCACACTCTTCA---TTCCATGGTTA
Caiman
TTTAATTCAGTCTGGCTGCATGGTCTTCTCCCACCACACTCTTCA---TTCCATGGTTA
Tursiops
TTTAATTCCTTGTGGATGCATGGTCTCCTCCCACCACATTCCTCT---TTCCCGTGGATG
Sus
TTTAATTCCTGTGGATGCATGGTCTCCTTCCACCACACTCCTCC---TTCCAATGGATG
Bos_taurus
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Ursus
TTTAATTCCTTGTGGTGCATGGTCTCCTCCCACCACATTCCTCT---TTCCCATGGATG
Equus
TTTAATTCCTTGTGGATGAATGGTCTCCTGCCGCCACCTTCCTCT---TTCCCATGGATG
Homo
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Cavia
CTCAATTCCTTGTGGCTGCAAGGTCTCCTCCCACCACCTTCGTCT---TTCCCGTGGCTG
Rattus
CTTAATAGTTTATGGTGCATGGACTCCTCCCACCGCATAATTCT---TTCCCATGGATA
Mus
CTTAATAGTTTATGGTGCACGGACTTCTCCCACCGCATAACTCT---TTCCCATGGATA
Monodelphis
TTTACCTCTTGTGGATGCATGGACTCCTTCCACCTCATTCCTCC---TTCCCATGGATG
Ornithorhynchus
TTTAATTCCTTATGGATGCATGGATTCTCCCCCACACTCCAAC---TACCCATGGCTG
Cobra
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Thamnophis
TTTAATTCGATGTGGATGCACAATTTCTACCGTCACATTCATCA---TTTTACTTGATA
Crotalus_horrid
TATCATTCAATGTGGATGCACAATTTCTACCATCACATTCAGCG---TTCTACTTGATA
Crotalus_mitche
TATCATTCAATGTGGATGCACAATTTCTACCATCACATTCAGCG---TTCTACTTGATA
Protobothrops
TATCATTCAATGTGGATGCACAATTTCTACCATCGCATTCATCG---TTCTACTTGATA
Vipera
TATCATTCAATGTGGATGCACAATTTCTACCATCGCATTCATCG---TTCTACTTGATA
Pantherophis
TTTAATTCATGTGGATGCACAATTTCTACCGTCACATTCATCA---TTTTACTTGATA
Boa
TTTCATTCAATGTGGATGCACAATTTCTACCATCCCATTCATCA---TTCTACTTGATA
Python_mulurus
TTTCATTCAATGTGGATGCACAATTTCTACCATCCCATTCATCA---TTCTACTTGATA
Ophisaurus

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Shinisaurus
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Pogona
TTTTTTCCACCATGGATGCACAATCACCTGCCACCACATTCCTTCA---TTCTACTGGTTG
Anolis
TTCCATTCCATGTGGGGCAGAAGTTTTCTCCCATCACATACATTT---TTGTGGATGACG
Gekko TTCCAT---
ATGTGGATGCACAATTTCCCTTCATCGCATTTCATCACCATCCTTTTGGGGG
MournGecko TTCCAT---
ATGTGGATGCACAATTTCCCTTCATCGCATTTCATCACCATCCTTTTGGGGG
Eublepharis TTCCAT---
GTGTGGATACACAATTTCCCTTCACCGCATTTCATCGCCACCTTATTGGGGG
Aspidoscelis
TTTGCTCCACTGTGGATTTCGCAATTTCCCTTCGACCACAGCCGTCC-----TATTGGATA

Allig_sinensis
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Allig_mississip
CAGCAAAGACCACAAGAACGTGAGACCCAACAGTATGAATATGCAATGCCTGTACATCCA
Crocodilus_poro
CAGCGAAGACCACAGGAACATGAGACCCAACAGTATGAATATGCAATGCCTGTACATCCA
Gharial
CAGCGAAGACCACAGGAACATGAGACCCAACAGTATGAATATGCAATGCCTGTACATCCA
Caiman
CAGCAAAGACCACAAGAACATGAGACCCAACAGTATGAATATGCAATGCCTGTACATCCA
Tursiops -----
AGACCAAGGGAACATGAAACTCAACAGTATGAATATTCTTTGCCTGTGCATCCC
Sus -----
AGACCAAGGGAACATGAAACTCAACAGTATGAATATTCTTTGCCTGTGCACCCC
Bos_taurus -----
AGACCAAGGGAACATGAAACTCAA-----
Ursus -----
AGACCAAGGGAACATGAAACTCAACAGTATGAATACTCTTTGCCTGTGCACCCC
Equus -----
AGACCAAGAGAACATGAAACTCAACAGTATGAATATTCTTTGCCTGTGCATCCC
Homo -----
AGGCAAGAGAACATGAAACTCAACAGTATGAATATTCTTTGCCTGTGCATCCC
Cavia -----
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Rattus -----
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Mus -----
GGACCAAGGGAACATGAAACCCAGCAGTATGAATATTCTTTGCCTGTGCATCCC
Monodelphis -----
CAGCAGAGGGAACATGAAACCCAACAGTATGAATATGCTTTGCCAGTCCACCCA
Ornithorhynchus -----

TCACCAAGAGACCAGGAGACACAACAGTACGAATACGCGTTGCCGGTGCATCCG
 Cobra CCGCAAAGACCTCAA---
 CATGAAACCCAACAGTATGAATATACAATGCCAGTGCACCCT
 Thamnophis CGACAAAGACCTCAA---
 CATGAAACCCAACAATATGAATACACAATGCCAGTGCACCCT
 Crotalus_horrid AGGCAAAGACCTCAA---
 GATGAAACTCAACAGTATGAATACACAATGCCAGTGCACCCT
 Crotalus_mitche AGGCAAAGACCTCAA---
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 Protobothrops AGGCAAAGACCTCAA---
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 Vipera AGGCAAAGACCTCAA---
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 Pantherophis CCGCAAAGACCTCAA---
 CATGAAACCCAACAGTATGAATACACAATGCCAGTGCACCCT
 Boa AGGCAAAGACCTCAA---
 CCTGAAACTCAGCAGTATGAATACTCAATGCCGGTGCACCCT
 Python_mulurus AGGCAAAGACCTCAA---
 CATGAAACTCAACAGTATGAATACTCAATGCCGGTGCACCCT
 Ophisaurus
 AAGCGAAGACCTCAAGAACACGAAACTCAACAGTATGAGTATTCTATGCCAGTGCACCCT
 Shinisaurus
 AGTCGAAGACCTCAAGAACACGGAACTCAACAGTATGAATATTCTATGCCGGTGCACCCT
 Pogona
 AGGCAAAGACCTCAAGACCATGAAACTCAACGATATGAATACACTATGCCAGTGCATCCA
 Anolis
 CAAGGAGGACCCCAACGACAGGACACTCAGCAGTATGAATATGCCATGCCAGTTCACCCA
 Gekko
 AAGCGAAGACTTCATGAGCATGATACTCAACAGTACGAATATTTCGATGCCGGTGCACCCG
 MournGecko
 AAGCGAAGACTTCATGAGCATGATACTCAACAGTACGAATATTTCGATGCCGGTGCACCCG
 Eublepharis
 AAGCGAAGAATTTCATGATCACGATACTCAACAGTATGAATATACAATGCCGGTACACCCT
 Aspidoscelis AAG---ATCCCTCAA-----
 CAGCAGTATGAATACAGCTTGCCTGTACACCCT

 Allig_sinensis
 CCACCTCTGCCATCGCAGCAGACCCCACTTCAGCCACAGCAACCAAGATTACAGGCTCAG
 Allig_mississip
 CCACCTCTGCCATCGCAGCAGACCCCACTTCAGCCACAGCAACCAAGATTACAGGCTCAG
 Crocodilus_poro
 CCACCTCTGCCATCACAGCAGACCCCACTTCAGCCACAGCAACCAAGATTACAGGCTCAG
 Gharial
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 Caiman
 CCACCTCTGCCATCGCTGCAGACCCCACTTCAGCCACAGCAACCAAGATTACAGGCTCAG
 Tursiops CCACCTCTCCATCGCAGCCATCC---

CTGCAGCCTCCACAGCCAGGA-----CAG
Sus CCACCTCTCCCATCGCAGCCATCC---
TTGCAGCCTCAACAGCCGGGA-----CAG
Bos_taurus -----CAGCCATCC---
CTGCAGCCTCAACAGCCAGGA-----CAG
Ursus CCACCTCTCCCATCGCAGCCGTCC---
CTGCAGCCGCAACAGCCAGGA-----CAG
Equus CCACCTCTCCCATCGCAGCCATCC---
CTGCAGCCTCAACAGCCAGGA-----CAG
Homo CCACCTCTCCCATCACAGCCATCC---
TTGAAGCCTCAACAGCCAGGA-----CTG
Cavia CCACCTCTCCCATCCCAGCCATCC---
CAGCAGCCTCCACAGCCAGGA-----ATG
Rattus CCACCTCTCCCATCACAGCCATCC---
TTGCAGCCTCACCAGCCAGGA-----CTG
Mus CCACCTCTCCCATCACAGCCATCC---
TTGCAGCCTCACCAGCCAGGA-----CTG
Monodelphis CCTCCTTTACCATCCCAGCAGACA---
CTGCAGCCCCAAAAGTCAGGC-----CAG
Ornithorhynchus CCTCCCCGGCCGTCCCAGCGGACC---
CTCCAGCCCCAGCAGCCGAAG-----CAG
Cobra CCTCCATTGCCTTCT---
CAAACACCCACTCTGCTCCAACAACCTGGGATACAAGACCAA
Thamnophis CCTCCGTTGCCATCT---
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Crotalus_horrid CCTCCATTGCCATCT---
CAAACACCCACTCTGCTACAACAACCTGGGATACAAGAGCAA
Crotalus_mitche CCTCCATTGCCATCT---
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Protobothrops CCTCCATTGCCATCT---
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Vipera CCTCCATTGCCATCT---
CAAACACCTACTCTGCTACAACAACCTGGGATACAAGAGCAA
Pantherophis CCTCCGTTGCCATCT---
CAAACACCCACTCTGCACCAACAACCTGGGATACAAGAGCAA
Boa CCTCCATTGCCATCT---
CAAACACCCACTCTGCTTCAACAACCTGGAATACCAGAACAA
Python_mulurus CCTCCATTGCCATCT---
CAAACAACCACTCTGCTTCAACAACCTGGGATACAAGAGCAA
Ophisaurus
CCTCCACTGCCATCCCAGCAGACGCCCACTCTGCTTCAACAGCCAGGAGTAATAGAGCAA
Shinisaurus
CCTCCTCTGCCATCCCAGCAAACGCCCACTCTGCTTCAACAGCCAGGAGTAATAGAGCAA
Pogona
CCTCCACTGCCATCTCAGCAAACACCCACTCTGCTTCAACGGCCTGGAATACCAGAGCAA
Anolis
CCTCCACTGCCGTCTCTGCAAACGCCCATTCAGTTTGCAGAGCCTAGACTACCAGAACAA

Gekko CCTCCTCTGCCATCTCAGCAAACCTCCCCTT-----
 CAGCCTCCTGGAATACAAGAGCAA
 MournGecko CCTCCTCTGCCATCTCAGCAAACCTCCCCTT-----
 CAGCCTCCTGGAATACAAGAGCAA
 Eublepharis CCTCCTCTGCCATCTCAGCAAACCTCCCATT-----
 CTGCATCATGGAGTGCAAGAGCAA
 Aspidoscelis
 CCACCCCTGCCATCTCAGCAAACGCCCACTATACCTCAGCCTGCAGGAAGGCAAGATAAT

Allig_sinensis AATCCTTCCCTGCGC---TCAACGCTGCC-----TCA---
 AAGCAAGGTCAA---ATA
 Allig_mississip AATCCTTCCCTGCAC---TCAACACTGCC-----TCA---
 AAGCAAGGTCAA---ATA
 Crocodilus_poro AATCCTTCCCTGCAC---TCAATGCTGCC-----TCA---
 AAGCAAGGTCAA---ATA
 Gharial AATCCTTCCCTGCAC---TCAATGCTGCC-----TCA---
 AAGCAAGGTCAA---ATA
 Caiman AATCCTTCCCTGCGC---TCAACGCTGCC-----ACA---
 AAGCAAGGTCAA---ATA
 Tursiops AAACCTTTCCTCCAGCCCACCGTTGTAACC-----TCT---
 GTCCAGAACACA---GTC
 Sus AAGCCTTTCCTCCAGCCCACCGTTGTAACC-----TCC---
 ATCCAGAACCCA---GTC
 Bos_taurus AAACCTTTCCTCCAGCCCACCGTTGTAACC-----TCC---
 ATGCAGAACGCA---GTC
 Ursus AAACCTTTCCTCCAGTCCGCTATTGTAACC-----GAC---
 ATCCGGGACACA---GCC
 Equus AAAGCTTTCCTCCAGCCCACCATTGTAACC-----
 TCAGGGATCCAGGACACC---ATC
 Homo AAACCTTTTCTCCAGTCTGCTGCTGCAACC-----ACC---
 AACCAGGCCACA---GCA
 Cavia AAACATTTCCAACAGCCCACCTGCTACCCCT-----GCT---
 ATCCAGGACACA---CCC
 Rattus AAACCCTTTCCTCCAGCCCACCTGCTGCAACC-----GGT---
 GTCCAGGTCACA---CCC
 Mus AAACCCTTTCCTCCAGCCCACCTGCTGCAACC-----GGT---
 GTCCAGGTCACA---CCC
 Monodelphis
 AAGTCTTTCTCCAGTCCAGTCCAGCACCA-----GATGCC---GCC
 Ornithorhynchus AATGCGTTCCTCCCTCCCACCGTGGCACCT-----TCC---
 GCCCAGGGCCCGCCTGCC
 Cobra CCTCATTACCATTATGCCCATTTCTTCCT-----ACA---
 AGGCAAGTCCAA---ATA
 Thamnophis CCTCATTACCACCTATGCACACTTCCTTCCT-----ACA---
 AGGCAAGTCCAA---ATG
 Crotalus_horrid CCTCCTTATCATTACACACATTTCTTCCT-----ACA---
 AGGCAAGTCCAA---ATA

Crotalus_mitche CCTCCTTATCATTACACACATTTCCCTTCCT-----ACA---
 AGGCAAGTCCAA---ATA
 Protobothrops CCTCCTTATCATTACACACATTTCCCTTCCT-----ACA---
 AGGCAAGTCCAA---ATA
 Vipera CCTCCTTATCATTACACACATTTCCCTTCCT-----ACA---
 AGGCAAGTCCAA---ATA
 Pantherophis CCTCATTACCATTACGCACATTTCCCTTCCT-----ACA---
 AGACAAGTCCAA---CTA
 Boa CCTAATCACCATTACACACATTTTCATTTCCT-----ACA---
 AGGCAACTCCAA---ACA
 Python_mulurus CCTCATTACCATTACACACATTTTCATTTCCT-----ACA---
 AGGCAAATGCCAA---ATA
 Ophisaurus CATCGCTACCCATTTCATAAATCTAAGTCCT-----ACA---
 AGGCAAGTCCAA---CTC
 Shinisaurus CCTCACTACTCATTCACGCATCTAATTCCT-----ACA---
 AGGCAAGTCCAA---CTC
 Pogona CCTCACTACCAATTCACTGATCTCACTCCT-----ACC---
 ATGCAAGCCCAA---CTC
 Anolis CCTTTCTTTCAAATCACAAATCTAATTCCT-----ACA---
 AGGCAAGTCCAG---ATT
 Gekko TTTCCCTTCCTACTGGCAAATCAAATTCATATACTCCT---
 AGGCAAATTCAA---CCC
 MournGecko TTTCCCTTCCTACTGGCAAATCAAATTCATATACTCCT---
 AGGCAAATTCAA---CCC
 Eublepharis TTTCCCTATCCTAGTGACAAATCAAATCCCATTTCTCTACA---
 AGGCAAGGACAA---CTC
 Aspidoscelis CCTCACTATCAACTCACGAATCGAATCCCA-----GCA---
 CGGCAAATCCAG---CTC

Allig_sinensis
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 Allig_mississip
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 Crocodilus_poro
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 Gharial
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 Caiman
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 Tursiops
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 Sus
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 Bos_taurus
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 Ursus
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Equus
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Homo
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Cavia
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Rattus
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Mus
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Monodelphis
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Ornithorhynchus
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Cobra
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Thamnophis
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Crotalus_horrid
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Crotalus_mitche
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Protobothrops
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Vipera
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Pantherophis
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Boa
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Python_mulurus
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Ophisaurus
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Shinisaurus
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Pogona
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ACACCATTACCAGAAGGGAAT
Anolis
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Gekko
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MournGecko
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Eublepharis
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Aspidoscelis
CAGCAATATAACTTT-----

CCATTCCTGCAACTAGAAAGGTAAC

Allig_sinensis CTGCCTGGGATT-----
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Allig_mississip CTGCCTGGGATT---
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Crocodilus_poro CTGCCTGGGATT-----
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Gharial CTGCCTGGGATT-----
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Caiman CTGCCTGGGATT---
CAACAACAGCTGATACCAGCAGACAAGCAG-----CTACAGTTA
Tursiops GGGCCAATGATT-----
CAACAGGTGGCACCATCAGAAAAGCCATCAAAGACCGAGTTG
Sus GGGCCAATGGTT---
CAGCAGCAGGTGGCACCATCAGAAAAGCCACCAGAGGCCGAGCTA
Bos_taurus GGGCCGATGGTT---
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Ursus GGGCCGATGCTT---
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Equus GGGCCAATGGTT---
CAACAGCAGGTGGCACCATCAGATAAGCCACCAAAGGCCGAGCTA
Homo CTGCCTCTGGTT---
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Cavia CTGCCAGAGGCT---
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Rattus
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Mus
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Monodelphis AAAGGAGCAGGC---
CAGCAGCCGGGGCTGCCCTTGGGCAACGCAGGGAGGCCCGAGCTA
Ornithorhynchus AAACCCTCCGTT---
CAAGAGCAGGTGGCCCCACCCAAAAGACCCCAAAGCCAGAGTTA
Cobra CAGCTGGGCGTT---CAGCAACAGCTATCA---
TTGGACAGACAT---GCTCAACAGTTA
Thamnophis CAGCCAGATGTT---CAACAACAGCTATCA---
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Crotalus_horrid CAGCCAGATGTT---CAGCAACAGCTATCA---
TTGGATAGACAG---ACTCAACAGTTA
Crotalus_mitche CAGCCAGATGTT---CAGCAACAGCTATCA---
TTGGATAGACAG---ACTCAACAGTTA
Protobothrops CAGCCAGATGTT---CAGCAACAGCTATCA---
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Vipera CAGCCAGATGTT---CAGCAACAGCTATCA---
TTGGATAGACAG---ACCCAACAGTTA
Pantherophis CAGCCAGATGTT---CAACAACAGCTATCA---

TTGGATAGA-----CNNTTA
Boa CCACCAGATATT---
CAGCAACAGCTATCACCATCAGACAGACAA---ACTCAGCAGTTA
Python_mulurus CAACCAGATGTT---
CAGCAACAGCCATCACCATCGGACAGACAA---ACTCAGCAGTTA
Ophisaurus CAGCCAGTTCTT---
CAACAACAGCTGCCCCACCAGACAGACAA---ACCCAACAGTTA
Shinisaurus CAGCCAGTTCTT---
CAGCAACAGCTGCCCCACCAGACAGACAA---ACACAACAGTTA
Pogona
CAGCCTGTCTGTTCCACAGAAGAAGCGGCCACCCTTGGACCGACAA---ACTCAACAG---
Anolis
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Gekko CACCCAGTTGTT-----
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MournGecko CACCCAGTTGTT-----
CAACAATTGCAGCTGCCAGACAGGCAG---ATGCAACAGTTA
Eublepharis CACCCGGTTGTT-----
CAACAATTGCTGCCATTAGACAGGCAA-----ACACAATTA
Aspidoscelis CAACCAGGGCTG-----
CCATCGGACAGACAA---AATGAACAGTTA

Allig_sinensis CCAGCGCTG---
GAATATTCAGGGCATTGTTGGGTCAGATG-----
Allig_mississip CCAGCGCTG---
GAATATTCAGGGCATTGTTGGGTCAGATG-----
Crocodilus_poro CCAGCACTG---
GAATATTCAGGGCATTGTTGGGTCAGGTG-----
Gharial CCAGCACTG---
GAATATTCAGGGCATTGTTGGGTCAGATG-----
Caiman CCAGCGCTG---
GAATATTCAGGGCATTGTTGGGTCAGGTG-----
Tursiops CCAGGAATG---
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Sus CCAGGACTG---
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Bos_taurus CCAGGAATG---
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Ursus CCGGGAATG---
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Equus AGAGAAATG---
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Homo CCAGGAGTA---
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Cavia CCTGTACTG---
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Rattus CCAATAATG---

GATTTTGCCGATCCACAATTCCCAACA-----
Mus CCAATAATG---
GATTTTGCTGATCCACAATTTCCAACC-----
Monodelphis CCAGAAATG---
GATTTTGCAGGTCAACTGGGTCAGTCG-----
Ornithorhynchus CCCGCACTG---
GATTTTACGGTTCAACTGAGACAGTCA-----
Cobra
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Thamnophis
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Crotalus_horrid
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Crotalus_mitche
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Protobothrops
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Vipera
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Pantherophis
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Boa
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Python_mulurus
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Ophisaurus
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Shinisaurus
CCAGCTGTACAAGAATACTCAGGGACATTAGGTCAGGCA-----
Pogona

Anolis

Gekko TCA---
TTTCAAGAATACTTGAGGACATTGGGTCAGACA-----
MournGecko TCA---
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Eublepharis CCA---
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Aspidoscelis
CCAGCTATTCAAGAATACTTGGAACACTAGATCAG-----

Allig_sinensis
-----ATG
Allig_mississip
-----ATG
Crocodilus_poro

-----ATG
Gharial
-----ATG
Caiman
-----ATG
Tursiops
-----ATG
Sus
-----ATG
Bos_taurus
-----ATG
Ursus
-----GTG
Equus
-----ATG
Homo
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Cavia
-----GTG
Rattus
-----GTG
Mus
-----GTG
Monodelphis
-----ATG
Ornithorhynchus
-----ATA
Cobra
-----ATC
Thamnophis
-----ATC
Crotalus_horrid
-----ATC
Crotalus_mitche
-----ATC
Protobothrops
-----ATC
Vipera
-----ATC
Pantherophis
-----ATC
Boa
-----ATC
Python_mulurus
-----ATC
Ophisaurus
-----ATC

Shinisaurus
-----ATT
Pogona
-----ATC
Anolis
-----ATC
Gekko
-----ATC
MournGecko
-----ATC
Eublepharis
-----ATT
Aspidoscelis

Allig_sinensis
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Allig_mississip
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Crocodilus_poro
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Caiman
TACCCAATTGTCATCAGTTAGTCCACCAAGGTCCAATGCAACCACAACAGCAACCAGCA
Tursiops TTTCCAATAGCC---
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Sus TTTCCAATAGCC---
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Bos_taurus TTTCCAATAGCC---
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Ursus TTCCAAATAGCC---
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Equus TTCCCAATAGCC---
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Homo TTCCAAATAGCC---
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Cavia TTCCAAATAGCC---
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Rattus TTCCAGATCGCC---
CATTCGCTGTCTCGGGACCAATGGCACACAACAAAGTACCCACT
Mus TTCCAGATCGCC---
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Monodelphis TTTCCAATGGGA---
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Ornithorhynchus
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Cobra TACCCCGGCTTA---
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Thamnophis TACCCTGGCTTA---
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Crotalus_horrid TACCCTGGCTTA---
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Boa TACCCTGGTTTA---
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Python_mulurus TACCCTGGTTTA---
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Ophisaurus TATCCTGGCTTA---
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Shinisaurus TATCCGGGTTTA---
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Pogona TACCTAGGTTTG---
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Anolis TATCCAGCTCTG---
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Gekko TACCCAGGTTTG---
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MournGecko TACCCAGGTTTG---
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Eublepharis TACCCAAGTTTG---
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Aspidoscelis -----
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Allig_sinensis
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Allig_mississip
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Crocodilus_poro
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Caiman
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Tursiops
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Sus
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Bos_taurus
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Ursus
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Equus
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Homo
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Cavia
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Rattus
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Mus
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Monodelphis
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Ornithorhynchus
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Cobra
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Thamnophis
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Crotalus_mitche
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Protobothrops
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Vipera
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Pantherophis
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Boa
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Python_mulurus
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Ophisaurus
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Shinisaurus
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Pogona
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Anolis
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Gekko

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MournGecko
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Eublepharis
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Aspidoscelis
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Allig_sinensis AGGCTT---
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Allig_mississip AGGCTT---
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Crocodilus_poro AGGCTT---
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Gharial AGGCTT---
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Caiman AGGCTT---
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Tursiops AGACTT---
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Sus AGACTT---
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Bos_taurus -----
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Ursus AGACTT---
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Equus AGACTT---
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Homo AGACTT---
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Cavia -----
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Rattus AGAATC---
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Mus AGAATT---
GGCTTCATGAGTTCAGAAGAAATGCCTGGAGAAAGAGGAAGTCCCATGGCC
Monodelphis AGATTT---
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Ornithorhynchus AGACTT---
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Cobra AGATTA---
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Thamnophis AGATTA---
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Crotalus_horrid AGATTA---
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Crotalus_mitche AGATTA---

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Protobothrops AGATTA---
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Vipera AGATTA---
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Pantherophis AGATTA---
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Boa AGATTA---
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Python_mulurus GGATTA---
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Ophisaurus AGATTA---
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Shinisaurus AGATTA---
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Pogona AGATTA---
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Anolis AGACAA---
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Gekko ACATTA---
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MournGecko ACATTA---
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Eublepharis
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Aspidoscelis AGATTA---
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Allig_sinensis TATGGTGCCATGATTCCT-----
GGATTCAGAGGGATGCCTCAG
Allig_mississip TATGGTGCCATGATTCCT-----
GGATTCAGAGGGATGCCTCAG
Crocodilus_poro TATGGTGCCATGATTCCT-----
GGATTCAGAGGGATGCCTCAG
Gharial TATGGTGCCATGATTCCT-----
GGATTCAGAGGGATGCCTCAG
Caiman TACGGTGCCATGATTCCT-----
GGATTCAGAGGGATGCCTCAG
Tursiops
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Sus
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Bos_taurus
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Ursus
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Equus

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Homo
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Cavia
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Rattus
TACGGAACCTGTTCCAGGATATGGAGGCTTCAGGCAAACCCTTAGGGGACTGAATCAG
Mus
TATGGAACCTGTTCCCAAGATTTGGAGGCTTCAGGCAAACCCTTAGGAGACTGAATCAG
Monodelphis TATGGTGCCATGTTTCCA-----
GGAATGAAGTCTGGCTTTGGAGGGATGCCCCCA
Ornithorhynchus
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Cobra
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Thamnophis
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Crotalus_horrid
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Crotalus_mitche
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Protobothrops
TATCGAGCAGCAGGCCCCCATGTCTTTCCCATGGATGCCAGATTTGGAAATATGCCATTG
Vipera
TATCGAGCAGCAGGCCCCCATGTCTTTCCCATGGATGCCAGATTTGGAAATATGCCATTG
Pantherophis
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Boa
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Python_mulurus
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Ophisaurus
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Shinisaurus
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Pogona
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Anolis
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Gekko
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MournGecko
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Eublepharis
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Aspidoscelis
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Allig_sinensis GACCCA---
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Allig_mississip GACCCA---
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Crocodilus_poro GACCCA---
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Caiman GACCCA---
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Tursiops AATCCA---
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Sus AACTCA---
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Bos_taurus AACCCA---
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Ursus AATCCA---
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Equus AATCCA---
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Homo AACCCA---
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Cavia GACCCG---
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Rattus AATTCA---
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Mus AATTCA---
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Monodelphis AACCCA---
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Ornithorhynchus AATCCG---
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Cobra AACAAT---
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Boa AATAGA---
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 Python_mulurus AATAGA---
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 Pogona AAC-----
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 Anolis AAC-----
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 Gekko
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 MournGecko
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 Eublepharis
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 Aspidoscelis CGCATA---
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 Allig_mississip
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 Caiman
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 Tursiops
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 Sus
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 Bos_taurus
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 Equus
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 Homo
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 Cavia
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 Rattus AAAGGCCCTGAGAAAGGAGAG---
 GGTCCAGAAGGCTCT-----CCTACTGCAA

Mus AAAGGCCCTGAAAAAGGAGAA---
GGTCCAGAAGGCTCT-----CCACTGCAA
Monodelphis
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Ornithorhynchus
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Cobra
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Thamnophis
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Crotalus_mitche
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Vipera
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Pantherophis
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Boa
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Python_mulurus
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Shinisaurus
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Pogona
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Anolis
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Gekko
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MournGecko
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Eublepharis
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Aspidoscelis
GAGCAGCCTGACGTTCAAGGAGGAGTTAACATGGGGCCC-----

Allig_sinensis GCAGTGAATCCTGCAGGGCATGGAAGTGCC---
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Allig_mississip GCAGTGAATCCTGCAGGCCATGGAAGTGCC---
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Crocodilus_poro GCCCTGAATCCTGCAGGCCATGGAAGTGCC---
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Gharial GCACTGAATCCTGCAGGCCATGGAAGTGCC---
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 Caiman GCAGTGAATCGTGCAGGCCATGGAAGTGCC---
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 Tursiops GAGGCCAACCCAGCCGATCTGGAAAACCCA---
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 Sus GAGGCCAACACAGCTGATCCTGAAAGCCCA---
 GCTCTCTTTTCAGAGGTAGCATCTGGT
 Bos_taurus GAGGCCACCTAGCCGATCCGGAAAGCCCA---
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 Ursus GATGGCGACCCAGCCAATCTGGAAAACCCA---
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 Equus GAGGCTGACGAGGCCAATCCGGAAAACCAG---
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 Homo GAGGCCAACCCAGACAATCTAGAAAACCCA---
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 Cavia GAAACCAAAGGAGAGGACCCTGAAAACGCA---
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 Rattus GAGGCCAGCCCAGACAAGGGCGAAAACCCG---
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 Mus GAGGCCAACCCAGGCAAACGGGAAAACCCC---
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 Monodelphis AAAGGCAATCCAGGCAATCTGGAGAAACCA---
 GCTTTCCTTCCAGAAGAAATCCCTTGG
 Ornithorhynchus GGAGCCATCCCGGCTGGTCACCCTAACCCA---
 GGGCTCCTTCCCTGAAAGAATTTCCAGG
 Cobra -----AACCTTCAAACAGAGGGAACAAT---
 GTTATCCCTGTAGAT-----ATC
 Thamnophis -----AATCCTCTGGACAGAGGGAATAAT---
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 Crotalus_horrid -----AACCTTCAGACAGAGGGAACACT---
 CTTATCCCTGTAGAT-----AGC
 Crotalus_mitche -----AACCTTCAGACAGAGGGAACACT---
 CTTATCCCTGTAGAT-----AGC
 Protobothrops -----AACCTTCAGACAGAGGGAACAAT---
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 Vipera -----AACCTTCAGACAGAGGGAACAAT---
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 Pantherophis -----AACCTTCAGACAGAGGGAATGAT---
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 Boa -----AACCTTCAAGCAGAGGGAACAAT---
 GTAATCCCTGTAGAT-----GGC
 Python_mulurus -----AACCTTCAGGGAGAGGGAACAAT---
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 Ophisaurus -----AACCCATCTGCCAAGAGGAACAAT---
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 Shinisaurus -----AACCTTCTGGCAAGGGGAACAAT---

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 Pogona -----AATCCTGCAGGCAAGGGGAACCCT---
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 Anolis -----AATCCTTCTGGCAAGGGGAACAAT---
 GCCGTCTTTTAGAT-----GGT
 Gekko -----
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 MournGecko -----
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 Eublepharis -----AACCTTCAGGCAACGGGAACAGT---
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 Aspidoscelis -----AACCTCCACAGACGGGGGAACAAT---
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Allig_sinensis GGACAGGAG---GGTTTTTTGCCAAATATT-----
 AACGATATGCCAGGCCAAGGGGTC
 Allig_mississip GGACAGGAG---GGTTTTTTGCCAAATATT-----
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 Crocodilus_poro GGACAGGAG---GGTTTTTTGCCAAACATT-----
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 Gharial GGACAGGAG---GGTTTTTTGCCAAACATT-----
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 Caiman GGACACGAG---GGTTTTTTGCCAAATATT-----
 AACGATATGCCAGGCCAAGGGGTC
 Tursiops GCCCTTGGA---GGGCTTCTTGCTAATCCT---
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 Sus GTCCTCGGA---GGGCTTCTTGCTAATCCA---
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 Bos_taurus GCCCTAGAA---GGGCTTCTTGCTAATCCT---
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 Rattus GCCCATGCA---GGACTTCTTGCTTTCCCC---
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 Mus GCCCATGCA---GGACTTCTTGCTTTCCCC---
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 Monodelphis GCTCAGGGA---GGGATCCTGTCTTTTCCC---
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 Cobra AACCCAAGG---GATGCCTTGCCCAATGCC---

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Thamnophis AACCCAAGG---
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Crotalus_horrid AACCCAAGG---GTTGCCTTGCCCAATGCC---
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Crotalus_mitche AACCCAAGG---GTTGCCTTGCCCAATGCC---
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Protobothrops AACCCAAGG---GTTGCCTTGCCCAATGCC---
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Vipera AACCCAAGG---GTTGCCTTGCCCAATGCC---
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Pantherophis AACCCAAGA---GTTGCCTTGCCCAATGCC---
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Boa AACCCAGGG---GTTGCCTTGCCCAATGCC---
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Python_mulurus AACCTAGGG---GTTGCCTTGCCCAATGTC---
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Ophisaurus AACCCAGGGT---GGTGCTGTGCCAAACGCC---
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Shinisaurus AGCCAGGGT---GGCGCTGTGCCAAACGGC---
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Pogona AATCCAGCTATTGGTGCCTCACCAAATGCC---
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Anolis ACCCAAGGC---GGTGCTTTGCCAAATGCC---
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Gekko AACCCAGGA---GGTGCTCTGTCC-----
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MournGecko AACCCAGGA---GGTGCTCTGTCC-----
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Eublepharis AACCTGGGA---GGCGCTTTGTCTAATGCC---
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Aspidoscelis CAACAAGGT---GGTACCTTGCTAAATGCC---
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Allig_sinensis AATCCTGTTGGTCAG---AGAGGAACTCTAGGG---
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Allig_mississip AATCCTGTTGGTCAG---AGAGGAACTCTAGGG---
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Crocodilus_poro AATCCTGTTGGTCAG---AGAGGAACTCTAGGG---
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Caiman AATCCTGTTGGTCAG---AGAGGAACTCCAGAG---
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Tursiops GGCCCTGCAGGGCAGAGCAGGGGACCCCTCAGG---
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Sus GGCCCTGCAGGGCGGAGCAGGGGACCCCCCGGG---

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Bos_taurus
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Cavia GGCCTTCAGGGCACAGGAACAGACCCCTTGAG---
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Rattus GGCCTGCAGGGCAAAGA-----CTCCTCGGA---
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Mus GGCCTGCAGGGCAAAGA-----CTCCTTGGA---
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Crotalus_mitche AACCCGGCTGGTCAGAGTAAAGGGCAACCAAAT---
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Vipera AACCCCGCTGGTCAGAGTAAAGGGCAACCAAAT---
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Pogona CATCCGGCTGGCCAGAGCAAAGGACCATTAGGG---
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Anolis AGCCCTGCTGGCCAGAGCCAAGGACTCTCAGGG---
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MournGecko AACCCCGCTGGGCAGAGTAAAGGACCTGGAGGC---
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Eublepharis AACCTGCTGGGCAGAGTCAAGGACCTGCGGGT---
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Aspidoscelis AACTCTCTGGCTCAGAGCAAGGGGTATTAGGC---
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Allig_sinensis GAATTAACACAGGGTATCCCTGACAGCTTTATGACCTTTGGT---
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Allig_mississip GAATTAACACAGGGTATCCCTGACAGCTTTATGACCTTTGGT---
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Tursiops CTGATGACCCCTGGATTAGCTGATGTTTATGAGACCTACAGT---
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Sus CTGATGACCCCGGATTAGCTGATGCTTATGAGACCTACGGT---
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Protobothrops CCAGCAATT-----
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Shinisaurus
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Aspidoscelis CTAGCAACACAAGGACTCCCGGACACCTTCCTCCCTTTTGGG---
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Allig_mississip
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Crocodilus_poro
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Caiman
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Tursiops
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Sus
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Bos_taurus
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Ursus CCCCTG-----
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Equus
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Homo
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Cavia CCCCTAGGA-----
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Rattus CCCTTGGGG---
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Mus CCCCTGGGT---
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Monodelphis
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Ornithorhynchus
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Cobra CCTTTG-----
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Thamnophis CCTTTG-----
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Crotalus_horrid CCTTTG-----
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Protobothrops CCTTTG-----
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Vipera CCTTTG-----
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Boa CCTTTG-----
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Shinisaurus CCTTTA-----
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Pogona CCTTTG-----
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Anolis CCTTTG-----
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Gekko CCGCTG-----
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MournGecko CCGCTG-----
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Eublepharis CCGCTG-----
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Aspidoscelis -----
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Allig_sinensis
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Allig_mississip
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Crocodilus_poro
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Caiman
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Tursiops
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Bos_taurus
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Ursus
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Equus
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Homo
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Cavia
ACTCCGATGCCAGGAAACAAGTCCGCCAGCCCCAGATGGTGACGAGCCATGGCATTTC
Rattus CCACCGATGCCTGGAAACAAGTGCACCAGCCCCAGGTG---
CACAAATGCATGGCGTTTC
Mus CCACTGCTACCTGGAAACAAGTGCACCAGCCCCAGGTG---
CACAACGCATGGCGTTTC
Monodelphis
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Ornithorhynchus
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Cobra
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Thamnophis
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Crotalus_mitche
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Protobothrops
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Vipera
TCAACCAGTGCAGGAAATGAGCCTGGCCAGCCACAAGTCAGTCAAAGCAGCTGGCATTTC
Pantherophis
TCAACCAGTGCAGGAAATGAGGCTGGCCAGCCACAAGTCAGTCAAAGCAGCTGGTATTTG
Boa

TCAACCAGTGCAGGAAATGAGGTTGGCCAGCCACAAGTCAGTCAAAACAGCTGGCATTTC
 Python_mulurus TCAACT---
 GGAGGAAATGAGGCTGGCCAGCCACAACCTCAGTCAAAACAGCTGGCATTTC
 Ophisaurus
 ACAACCAATGCAGTAAATGAGGCTGGCCAGCCACAGGTAGGTCAGGACATCTGGCATTTC
 Shinisaurus
 ACAACCAATGTAGGAAATGAGGCTGGCCAGCCACAGGTCGGTCAGGATGTCTGGCATTTC
 Pogona
 CCAACTGATGTGGGAAATGGGGCAGGCCTGTCCCCGATAGGCCAGGACATGTGGCATTTC
 Anolis
 ACAAGCAATGTGGGAAATGAGGCTGGTCTGGCCCAGGTGGGTCAGGATGCATGGCATTTC
 Gekko
 ACAGCCCAGGCAGGAAATGAGGTTGGGCGGCCACAGATAGGTCAGGACGGATGGCATTTC
 MournGecko
 ACAGCCCAGGCAGGAAATGAGGTTGGGCGGCCACAGATAGGTCAGGACGGATGGCATTTC
 Eublepharis ACACCCAGACAGGATATGAGGCTGGCCAGCCA-----
 CAAGATGGATGGCATTTC
 Aspidoscelis ACAAC-----
 AACGTGGCTGGCTACCCACAAGTAGGTCAGGATATGTGGCATTTC

Allig_sinensis	CAAGAGCCC
Allig_mississip	CAAGAGCCC
Crocodilus_poro	CAAGAGCCC
Gharial	CAAGAGCCC
Caiman	CAAGAGCCC
Tursiops	CAAGAGCCC
Sus	CAAGAGCCC
Bos_taurus	CAAGAGCCC
Ursus	CAAGAGCCC
Equus	CAAGAGCCC
Homo	CAAGAGCCC
Cavia	CAAGAGCCC
Rattus	CAAGAGCCC
Mus	CAAGAGCCC
Monodelphis	CAAGAACCC
Ornithorhynchus	CAGGAGCCC
Cobra	CAAGAGCCT
Thamnophis	CAAGAGCCC
Crotalus_horrid	CAAGAGCCT
Crotalus_mitche	CAAGAACCT
Protobothrops	CAAGAGCCT
Vipera	CAAGAGCCT
Pantherophis	CAAGAGCCT
Boa	CAAGAGCCC
Python_mulurus	CAAGAGCCC
Ophisaurus	CAAGAGCCC
Shinisaurus	CAAGAGCCC

Pogona	CAAGAGCCC
Anolis	CAAGAGCCC
Gekko	CAAGAACCC
MournGecko	CAAGAACCC
Eublepharis	CAAGAACCC
Aspidoscelis	CAGGAGCCC

Mammals+Reptiles-AMEL-AA-Aln.txt

CLUSTAL format alignment by MAFFT (v7.370)

```

Allig_sinensis MEGWMLITCLLGATFAIP--
VPPHPHHPGYVNFSYE-----VLTPLKWKYQS
Allig_mississip MEGWMLITCLLGATFAIP--
VPPHPHHPGYVNFSYE-----VLTPLKWKYQS
Crocodilus_poro MEGWMLITCLLGATFAIP--
VPPHPHHPGYVNFSYE-----VLTPLKWKYQS
Gharial MEGWMLITCLLGATFAIP--
VPPHPHHPGYVNFSYE-----VLTPLKWKYQS
Paleosuchus MEGWMLITCLLGATFAIP--
LPPHPHHPGYVNFSYE-----VLTPLKWKYQS
M.musculus MGTWILFACLLGAAFAMP--
LPPHPGSPGYINLSYE-----VLTPLKWKYQS
Rattus MGTWILFACLLGAAFAMP--
LPPHPGSPGYINLSYE-----VLTPLKWKYQS
Sus MGTWILFACLLGAAFSMP--
LPPHPGHPGYINFSYE-----VLTPLKWKYQN
Bos MGTWILFACLLGAAFSMP--
LPPHPGHPGYINFSYE-----VLTPLKWKYQS
Human MGTWILFACLLGAAFAMP--
LPPHPGHPGYINFSYE-----VLTPLKWKYQS
Equus MGTWILFASLLGAAFAMP--
LYLILGTLGYINFSYE-----VLTPLKWKYQS
Ursus MGTWILFACLLGAAFAMP--
LPPHPGHPGYINFSYENAHFQAINIDRTASVLTPLKWKYQN
Tursiops MGTWILFACLLGAAFSMP--
LPPHPGHPGYINFSYENSYFQVVRIDGTASVLTPLKWKYQN
Ornithorhynchus MGTWILFTCLIGAAFAIP--
LPPHPAHPGYINFSYE-----VLTPLQWYQN
Cavia MGTWILFACLLGTAFAMP--
LPPHPGHPGYINFSYEKSHSNAINIDRTALVLTPLKWKYQS
Monodelphis MRTWILLACLLGAAFAIP--
LPPHPGHPGYINFSYE-----VLTPLKWKYQS
Anolis MEGWTLVMCLLSTTFAIP--LP---
```

QHPGYINFSYE-----VMTPLKWKYQS
 Ophisaurus MESWTLVMCLLSTTFALP--LP---
 QHPGYINFSYE-----VMTPLKWKYQS
 Shinisaurus MMSWTLVMCLLSSTFALPPQLP---
 QHPGYINFSYE-----VMTPLKWKYQS
 Boa_constrictor MESWTLVMCLLSTAFaip--LP---
 QHPGYINLSYE-----VMTPLKWKYQS
 Thamnophis MESWTLVMCLLSTAFaip--LP---
 QHPGYINFSYE-----VMTPLKWKYQS
 Crotalus_horrid MESWTLVMCLLNSAFaip--LP---
 QHPGYINFSYE-----VMTPLKWKYQS
 Crotalus_mitche MESWTLVMCLLNSAFaip--LP---
 QHPGYINFSYE-----VMTPLKWKYQS
 Protobothrops MESWTLVMCLLSSAFaip--LP---
 QHPGYINFSYE-----VMTPLKWKYQS
 Vipera MESWTLVMCLLSSAFaip--LP---
 QHPGYINFSYE-----VMTPLKWKYQS
 Python_mulurus MESWTLMLCLLSTAFaip--LP---
 QHPGYINFSYE-----VMTPLKWKYQS
 Cobra MESWTLVMCLLSTAFaip--LP---
 QHPGYINFSYE-----VMTPLKWKYQS
 Pantherophis MESWTLVMCLLSTTFaip--LP---
 QHPGYINFSYE-----VMTPLKWFQS
 Ctenosaurs MGGWTLVMCLLCTTLAIP--LP---
 QHPGFINFSYE-----VMTPLKWKYQS
 Pogona MEGWTLIMSLLCCTTLAIP--LP---
 QHPGFINFSYE-----VMTPLKWKYQS
 Eublepharis MKGWTLFMCLFSAAFSLP--LP-
 HAQHPGYINFSYE-----VMTPLKWKYQS
 MournGekko MKSWTLMLICLFSAVFSLP--LP-
 HAQHPGYINFSYE-----VMTPLKWKYQS
 Gekko_japon MKSWTLMLICLFSAVFSLP--LP-
 HAQHPGYINFSYE-----VMTPLKWKYQS
 Aspidoscelis MEGWTLVMCFLSATFAVP--LP---
 QHPGYINFSYE-----VMTPLKWKYQS
 * * * . . : : : : * : * : : : * * *

*:***:*. .
 Allig_sinensis LMRQPYSSYGYEPMGGWLHQPMLPI--AQQ-----HPPIQ-
 TLTPHH-QIPFL----
 Allig_mississip LMRQPYSSYGYEPMGGWLHQPMLPI--AQQ-----HPPIQ-
 TLTPHH-QIPFL----
 Crocodilus_poro LMRQPYSSYGYEPMGGWLHQPMLPI--AQQ-----HPPIQ-
 TLTPHH-QIPFL----
 Gharial LMRQPYSSYGYEPMGGWLHQPMLPI--AQQ-----HPPIQ-
 TLTPHH-QIPFL----
 Paleosuchus LMRQPYSSYGYEPMGGWLHQPMLPI--AQQ-----HPPIQ-

TLTPHH-QIPFL----
 M.musculus MIRQPYPYSGYEPMGGWLHHQIIPVL-SQQ-----HPPSH-
 TLQPHH-HLPVVPAQQ
 Rattus MIRQPHPSYGYEPMGGWLHHQIIPVL-SQQ-----HPPSH-
 TLQPHH-HLPVVPAQQ
 Sus MIRHPYTSYGYEPMGGWLHHQIIPVV-SQQ-----TPQSH-
 ALQPHH-HIPMVPAQQ
 Bos MIRHPYPSYGYEPMGGWLHHQIIPVV-SQQ-----TPQNH-
 ALQPHH-HIPMVPAQQ
 Human -IRPPYPSYGYEPMGGWLHHQIIPVL-SQQ-----HPPTH-
 TLQPHH-HIPVVPAQQ
 Equus LIRQPYTSYGYEPMGGWLHHQIIPVL-SQQ-----NPSNH-
 ALQPHH-HIPMVSAQH
 Ursus MIRHPYPSYGYEPMGGWLHHQIIPVL-SQQ-----NPPNH-
 ALQPHH-HIPMVPAQQ
 Tursiops VIRHPYPSYGYEPMGGWLRHQIIPVV-SQQ-----A-
 ALQPHH-HFPMVPAQQ
 Ornithorhynchus MKRQQYPSYGYEPMGGWLHHQIIPVL-SQQ-----QTPTH-
 ALQPHH-HIPVMAAQQ
 Cavia MIRQPYPYSGYESMGGWVHHQVIPVL-SQQ-----
 HPPSHTTLPPHH-HIPVGPAQQ
 Monodelphis MMRQQYPSYGYEPMGGWLHHQIIPVL-SQQ-----HSPSH-
 SLPPQH-HIPIMAAQQ
 Anolis LIGHQYPRYGFEPMGGWMHHAAGPTM-HQTTFQSHPSVHSTLH-
 QMQPPH-----
 Ophisaurus LIGHQYPRYGYEPMGGWMHHTSGPMT-HQPYFQG-NPMH--LH-
 PMQPQQ-----
 Shinisaurus LIGHQYPRYGYEPMGGWMHHTSGPVT-HQTHFQGLHPMHP-LH-
 QIHPQQ-----
 Boa_constrictor IIGHQYPRYGYEPMGGWMHHNAGPVM-HPTHFHGVHAMHPALH-
 QMQPQQ-----
 Thamnophis IIGHQYPRYGYEPMGGWMHHNAGPLM-HPTHFHGVHAIHPALH-
 QMQPQQ-----
 Crotalus_horrid IIGHQYPRYGYEPMGGWMHHNAGPMM-HPTHFHGVHAIHPALH-
 QMQPLQ-----
 Crotalus_mitche IIGHQYPRYGYEPMGGWMHHNAGPMM-HPTHFHGVHAIHPALH-
 QMQPLQ-----
 Protobothrops IIGHQYPRYGYEPMGGWMHHNAGPMM-HPTHFHGVHAIHPALH-
 QMQPLQ-----
 Vipera IIGHQYPRYGYEPMGGWMHHNAGPMM-HPTHFHGIHAIHPALH-
 QMQPLQ-----
 Python_mulurus IIGHQYPRYGYEPMGGWMHHNAGPLM-HPTHFHGVHAMHPSLH-
 PMQPQQ-----
 Cobra IIGPQYPRYGYEPMGGWMHNSGPVT-HPTHF---HAIHPALH-
 QMQPPQ-----
 Pantherophis IIGHQYPRYGYEPMGGWMHHNAGPMM-QPPHFHGVHAIHPALH-
 QKQPHQ-----

Ctenosaurs LMGPOYPYRGYEPMGGWMRHATGPMM-HQTHIQNLPPMHSPH-
 QMQPQH-----
 Pogona VMGHQYPRYGYEPMGGWMHHSFGSMM-HQAPFQTLHPMPPLH-QVQ-
 QQ-----
 Eublepharis LIGHQYPRYSYEPMGGWMHHTGPAMPHPHSSFPGFQQIHAPSH-
 QMHPSQQHLQ-----
 MournGekko LIGHQYPRYSYEPMGGWMHHTGP---HHSPYLGFFQIHLPLH-
 QMHPSQQHL-----
 Gekko_japon LIGHQYPRYSYEPMGGWMHHTGP---HHSPYLGFFQIHLPLH-
 QMHPSQQHL-----
 Aspidoscelis LVGPQLPHYGYGPMAGWIOHSGGPAM-PHAQFQ---MHNPLH-
 QVQPHL-----

. * . : . * . * : : .

Allig_sinensis --SPQHPLMQMPGPHQMMPIPQQQPSLQM-----PVQEPVQ----
 PQAGEHPSP----
 Allig_mississip --SPQHPLMQMPGPHQMMPIPQQQPSLQM-----PVQEPVQ----
 PQAGEHPSP----
 Crocodilus_poro --SPQHPLMQMPGPHQMMPIPQQQPSLQM-----PVQEPVQ----
 PQPGEHPSP----
 Gharial --SPQHPLMQMPGPHQMMPIPQQQPSLQM-----PVQEPVQ----
 PQAGEHPSP----
 Paleosuchus --SPQHPLMQMPGPHQMMPIPQQQPSLQM-----PVQEPVQ----
 PQAGEHPSP----
 M.musculus PVAPQQPMPVPGHHSMTPTQHHQPNIPP---SAQQPFQPFQ----
 PQAIP-PQSH---
 Rattus PVAPQQPMPVPGHHSMTPTQHHQPNIPP---SAQQPFQPFQ----
 PQAIP-PQSH---
 Sus PGIPQQPMMPLPGQHSMTPTQHHQPNLPL-----PAQQPFQ----
 PQPVQ-PQPH---
 Bos PVVPQQPMPVPGQHSMTPTQHHQPNLPL-----PAQQPFQ----
 PQSIQ-PQPH---
 Human PVIPQQPMPVPGQHSMTPTQHHQPNLPP-----PAQQPYQ----
 PQPVQ-PQPH---
 Equus PVVPQQPMMPLPGQHSMTPTQHHQPNLPP-----PVQQPFH----
 PQPVQ-PQPH---
 Ursus PVVPQQPMMPLPGQHSMTPTQHHQPNLPL-----PAQQPFQ----
 PQPVQ-PQPH---
 Tursiops PVGPQQTMMPIPGQHSMTPTQHHQPNLPP-----PAQQPVQ----
 PQP-----
 Ornithorhynchus PMQPQQPMPMPGQPSVTPTQHHQSNLPQ-----PAQQPFQ----
 PQVPQ-QPPH---
 Cavia PVVPQQPLMPVPGHHSMTPTQHHQPNLPP-----
 TSQQPFQPFPTQPVQ-PQHH---
 Monodelphis PAPPQQPMPVPGQHPMPTQHHQPNLPP-----PGQQPYQ----
 PQAQQPQPHQPI
 Anolis --PALNPHMQPPGHNPFGPMPGQNTLMPQFQPAHGGPIHHPFQ----

PHAGE-----
 Ophisaurus --PPHNPHMQYPGHNSYGPMTGQDTLMPHYPPPQVGPVQHPPP----
 PHAGE-----
 Shinisaurus --PPVNPPMQQPGHNPFVPMTGQNPLMPQYQPTHTGTVQHPLV----
 PHAGE-----
 Boa_constrictor --PPHNPHLQQPGHNPFVPIHGHNTLIPHYQ-----PVQHFPQ----
 PQAGE-----
 Thamnophis --PPQNPHLQQPGLNPFVQLNGHNALIPHYL-----PIQHPLQ----
 PQAGE-----
 Crotalus_horrid --PPQNPHLQQPGLNPFVPLNGHNTLIPHYQ-----SVQYPLQ----
 PQTGE-----
 Crotalus_mitche --PPQNPHLQQPGLNPFVPLNGHNTLIPHYQ-----SVQYPLQ----
 PQTGE-----
 Protobothrops --PPQNPHLQQPGLNPFVPLNGHNTLIPHYQ-----SVQYPLQ----
 PQTGE-----
 Vipera --PPQNPHLQQPGLNPFVPLNGHNTLMPHYQ-----SIQYPLQ----
 PQTGE-----
 Python_mulurus --PPQNPHLQQPGHNPFIPITGHNPLIPHYQ-----PIQHPLQ----
 PQAGE-----
 Cobra --LPQNPHLQQPGPNPFVPLNGHNTLIPHYQ-----SIQHPLQ----
 PQAGE-----
 Pantherophis --LPQNPQLQQPGLNAFVPLNGHNALIPHY-----QHPLQ----
 PQAGE-----
 Ctenosaurs --QILNPQMPQPGHNGFVPLPGQNTLMPQFQ-----PAHGALP----
 PQIGE-----
 Pogona --PPLNPHMQLPGHNTLVPMTGQSTLTPQYQPAHAGPVHQFPF----
 PVAGE-----
 Eublepharis --PPLNTPVQFAGHSFPGHMPGQNT-MPQYQP--GVAVQHFPF----
 PHAGE-----
 MournGekko --PPMNTPLQPVGHAPFGQMPGQNT-MPHYPA--GVPVQNP-----
 PHAGE-----
 Gekko_japon --PPMNTPLQPVGHAPFGQMPGQNT-MPHYPA--GVPVQNP-----
 PHAGE-----
 Aspidoscelis -----QSFPSHPAYHPIGPMPGQNGIVPHYQ-----PQQHPPP----
 PPAGE-----

:. . :. : . .

Allig_sinensis -----
 PLQPQQPGHPNPPMQQLPGSPHPPMQQQPGIPNPPMYPMQPLPPLLDP
 Allig_mississip -----
 PLQPQQPGHPNPPMQQLPGSPHPPMQQQPGIPNPPMYPMQPLPPLLDP
 Crocodilus_poro -----
 PVQPQQPGHPNPPMQQLPGSPHPPMQQQPGIPNPPMYPMQPLPPLLDP
 Gharial -----
 PVQPQQPGHPNPPMQQLPGSPHPPMQQQPGIPNPPMYPMQPLPPLLDP
 Paleosuchus -----
 PVQPQQPGHPNPPMQQLPGSPHPPMRPQQPGIPNPPMYPMQPLPPLLDP

M.musculus -----
QPMQPOSPLHPMQPLAPQPPLPPLFSMQPLSPILPE
Rattus -----
QPMQPOSPLHPMQPLAPQPPLPPLFSMQPLSPILPE
Sus -----
QPLQPOSMPHPIQPLLPQPPLPPMFSMQSL---LPD
Bos -----
QPLQPHQPLQPMQPMQPLQPLQPLQPPVHPIQPLPPQPPLPPIFPMQPLPPMLPD
Human -----
QPMQPPVHPMQPLPPQPPLPPMFPMQPLPPMLPD
Equus -----
QPIQPPLHPIQPLPPQPPLPPIFPLQPLPPMLPD
Ursus -----
HPIQPLPPQPPLPPMFPQPLPPMLPD
Tursiops -----HP--
PLLQPPPLPPMFPMQPLPPMLPD
Ornithorhynchus -----QPIQPQAPAHMPMPM-
PQPPLPPMFPMQPLPPLLPD
Cavia -----
QPIQPIQPIQPIQPIQPIQPOSPLHPIQPLPPQQALPPMFSMQPIAPLLPD
Monodelphis -----
QPIQPIQPIQPIQPMQPMQPMQPMQPMQPTPVHAVLPLPPQPPLPPMFPMQPMSPLPD
Anolis -----
HPMHPQQTGNPVHPMHPQOPANPNSPIYPVQQLPPLISD
Ophisaurus -----
YPMHPQQPGNRNHPMHPQQPGNPNQPMYPIQ--PPLIPD
Shinisaurus -----
HPMHPQQPGNPNQPMHPQQPGNPNVHPMYPIQPMPLIPD
Boa_constrictor -----
HPMQPPVNPQNQSMHPQQPGNANQPIYP---LPPLIPD
Thamnophis -----
HPMQPPVNPQNQSMNPQQPGNANQPMYP---LPPLIPD
Crotalus_horrid -----
HPMKPQPPVNPQNQSMNPQQSGNANQPIYP---LPPLIPD
Crotalus_mitche -----
HPMKPQPPVNPQNQSMNPQQSGNANQPIYP---LPPLIPD
Protobothrops -----
HPMKPQPPVNPQNQSMNPQQSGNANQPIYP---LPPLIPD
Vipera -----
HPMKPQPPVNPQNQSMNPQQSGNANQPIYP---LPPLIPD
Python_mulurus -----HPMQ---
PVNPNQSVHPQQPGSANQPIYP---LPPLIPD
Cobra -----
HPMQPPINPNQSMNPQQPGIANQPMYP---LPPLIPD
Pantherophis -----HPMQPLPPVNP---
MNPQQPGNANQPMYP---LPPLIPD
Ctenosaurs -----

HPMYPQQHGNPMPP IHPQQPANPNPPMYPVQPHAPVFPD
 Pogona -----
 APMQPQLPAHPNQMHPQLPAHPNQMFPMQPLPPLMPD
 Eublepharis -----
 HPVHHQQPGNPNQMOPGNPNQPVYQVHPVPLPPIHD
 MournGekko -----
 HPGHHQQPGNPNHPMQGGPNQPMYPVHPVQPLPPIHD
 Gekko_japon -----
 HPGHHQQPGNPNHPMQGGPNQPMYPVHPVQPLPPIHD
 Aspidoscelis -----HPSHPYQPVNGVQPQHPLT-
 GNTNQPIYQAQPQLPVIRD

* . :. : :

Allig_sinensis MPLEPWRPMDKTKQEEID-----
 Allig_mississip MPLEPWRPMDKTKQEEID-----
 Crocodilus_poro MPLEPWRPMDKTKQEEID-----
 Gharial MPLEPWRPMDKTKQEEID-----
 Paleosuchus MPLEPWRPMDKTKQEEID-----
 M.musculus LPLEAWPATDKTKREEVAFSPMK--WYQGMTRHPLNMESTTEK
 Rattus LPLEAWPATDKTKREEVAFSPMK--WYQGTARHPLNMETTTEK
 Sus LPLEAWPATDKTKREEVD-----
 Bos LPLEAWPATDKTKREEVD-----
 Human LTLEAWPSTDKTKREEVD-----
 Equus LPLEAWPATDKTKREEVD-----
 Ursus LPLEAWPATDKTKREEVVSIP-----
 Tursiops LPLEAWPATDKTKREEVVSIP-----
 Ornithorhynchus LPLEQWPATDKTKREEVVSIP-----
 Cavia LPLEAWPATDKTKREEVD-----
 Monodelphis --MEAWPATDKTKREEVD-----
 Anolis TPLESWPPADKTKQEEVD-----
 Ophisaurus TPLESWPPADKTKQEEVD-----
 Shinisaurus TPLESWPPADKTKQEEVD-----
 Boa_constrictor TPLESWP-ADKTKQEEVD-----
 Thamnophis TPLESWP-ADNTKKEEVD-----
 Crotalus_horrid TPLESWP-ADKTKQEEVD-----
 Crotalus_mitche TPLESWP-ADKTKQEEVD-----
 Protobothrops TPLESWP-ADKTKQEEVXX-----
 Vipera TPLESWP-ADKTKQEEVXX-----
 Python_mulurus TPLESWP-ADKTKQEEVXX-----
 Cobra TPLESWP-ADKTKKEEVD-----
 Pantherophis TPLESWP-ADKTKKEEVD-----
 Ctenosaurs TPLESWPAADKTKQEEVDX-----
 Pogona TPLESWVPDKTKQEEVDX-----
 Eublepharis AP-EPWPGTDKTKQEEVK-----
 MournGekko APLEPWPAGTDKTKQEEVYE-----
 Gekko_japon APLEPWPAGTDKTKQEEVYE-----

Aspidoscelis TPLE-WPAPDKTKQEEVXX-----
 * * *:*:*:*:

Mammals+Reptiles-AMEL-CDS-Aln.txt

PAL2NAL output

CLUSTAL W multiple sequence alignment

Allig_sinensis
ATGGAGGGCTGGATGTTGATCACTTGCCTACTAGGTGCAACATTTGCTATACCA-----
Allig_mississip
ATGGAGGGCTGGATGTTGATCACTTGCCTACTAGGTGCAACATTTGCTATACCA-----
Crocodilus_poro
ATGGAGGGCTGGATGCTGATCACTTGCCTACTAGGTGCAACATTTGCTATACCA-----
Gharial
ATGGAGGGCTGGATGTTGATCACTTGCCTACTAGGTGCAACATTTGCTATACCA-----
Paleosuchus
ATGGAGGGCTGGATGTTGATCACTTGCCTACTAGGTGCAACATTTGCTATACCA-----
M.musculus
ATGGGGACCTGGATTTTGTTCCTGCCTCCTGGGAGCAGCTTTTGCTATGCCC-----
Rattus
ATGGGGACCTGGATCTTGTTCCTGCCTCCTGGGAGCAGCTTTTGCTATGCCC-----
Sus
ATGGGGACCTGGATTTTGTTCCTGCCTCCTGGGAGCAGCCTTCTCTATGCCT-----
Bos
ATGGGGACCTGGATTTTGTTCCTGCCTCCTGGGAGCAGCCTTCTCTATGCCT-----
Human
ATGGGGACCTGGATTTTATTCCTGCCTCCTGGGAGCAGCTTTTGCCATGCCT-----
Equus
ATGGGGACCTGGATTTTGTTCCTGCCTCCTGGGAGCAGCCTTTGCTATGCCC-----
Ursus
ATGGGGACCTGGATTTTGTTCCTGCCTCCTGGGAGCAGCCTTTGCTATGCCC-----
Tursiops
ATGGGGACCTGGATTTTGTTCCTGCCTCCTGGGAGCAGCCTTCTCTATGCCC-----
Ornithorhynchus
ATGGGGACTTGGATTCCTGTTCACTTGCCTAATAGGAGCAGCATTGCTATACCA-----
Cavia
ATGGGAACCTGGATTTTGTTCCTGCCTCCTGGGAACAGCCTTTGCTATGCCT-----
Monodelphis
ATGAGGACTTGGATCCTTCTGCCTGTCTCTTGGGTGCAGCATTGCTATTCCT-----
Anolis
ATGGAAGGCTGGACTTTGGTTATGTGCCTTTTAAGTACCACATTTGCTATTCCA-----
Ophisaurus
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAGTACCACCTTTGCTCTTCCG-----
Shinisaurus

ATGATGAGCTGGACTTTGGTTATGTGCCTCTTAAGTAGCACATTTGCTCTTCCACCACAG
Boa_constrictor
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAGTACTGCATTTGCAATCCCA-----
Thamnophis
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAGTACTGCATTTGCAATCCCA-----
Crotalus_horrid
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAATTCTGCATTTGCAATCCCA-----
Crotalus_mitche
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAATTCTGCATTTGCAATCCCA-----
Protobothrops
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAGTTCTGCATTTGCAATCCCA-----
Vipera
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAGTTCTGCATTTGCAATCCCA-----
Python_mulurus
ATGGAGAGCTGGACTTTGCTTATGTGCCTCTTAAGTACTGCATTTGCAATCCCA-----
Cobra
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAGTACTGCATTTGCAATCCCA-----
Pantherophis
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAGTACTACATTTGCAATCCCA-----
Ctenosaurs
ATGGGGGGCTGGACTTTGGTTATGTGCCTCTTATGTACCACATTGGCTATTCCA-----
Pogona
ATGGAGGGCTGGACTTTGATTATGAGCCTCTTATGTACTACACTTGCTATTCCA-----
Eublepharis
ATGAAGGGCTGGACTTTGTTTATGTGTCTCTTCAGTGCTGCATTTTCTCTTCCA-----
MournGekko
ATGAAGAGCTGGACTTTGCTTATCTGCCTCTTCAGTGCTGTATTTTCTCTTCCA-----
Gekko_japon
ATGAAGAGCTGGACTTTGCTTATCTGCCTCTTCAGTGCTGTATTTTCTCTTCCA-----
Aspidoscelis
ATGAAGGCTGGACTTTGGTTATGTGCTTTTTTAAGTGCTACATTTGCTGTTCCA-----

Allig_sinensis
GTGCCTCCCCATCCACATCATCCTGGTTATGTCAACTTCAGTTATGAG-----
Allig_mississip
GTGCCTCCCCATCCACATCATCCTGGTTATGTCAACTTCAGTTATGAG-----
Crocodilus_poro
GTGCCTCCCCATCCACATCATCCTGGTTATGTCAACTTCAGTTATGAG-----
Gharial
GTGCCTCCCCATCCACATCATCCTGGTTATGTCAACTTCAGTTATGAG-----
Paleosuchus
TTGCCTCCCCATCCACATCATCCTGGTTATGTCAACTTCAGTTATGAG-----
M.musculus
CTACCACCTCATCCTGGAAGCCCTGGTTATATCAACTTAAGCTATGAG-----
Rattus
CTACCACCTCATCCTGGGAGCCCTGGTTATATCAACTTAAGCTATGAG-----
Sus

CTACCACCTCATCCTGGGCACCCTGGTTATATCAACTTCAGCTATGAG-----
Bos
CTACCACCTCATCCTGGGCACCCTGGTTATATCAACTTCAGCTATGAG-----
Human
CTACCACCTCATCCTGGGCACCCTGGTTATATCAACTTCAGCTATGAG-----
Equus
CTATATCTCATCCTGGGCACCCTGGTTATATCAACTTCAGCTATGAG-----
Ursus
CTACCACCTCATCCTGGGCACCCTGGTTATATCAACTTCAGCTATGAGAATGCACACTTT
Tursiops
CTACCACCTCATCCTGGGCACCCTGGTTATATCAACTTCAGCTATGAGAATTCATATTTT
Ornithorhynchus
CTTCCTCCTCATCCTGCACATCCCGGTTATATCAACTTCAGCTACGAG-----
Cavia
CTACCACCTCATCCTGGGCACCCGGGCTATATCAACTTCAGCTATGAGAAGTCACATTCT
Monodelphis
CTGCCACCTCATCCTGGACATCCTGGTTATATCAACTTCAGCTATGAG-----
Anolis TTGCCA-----
CAACATCCTGGTTATATCAATTTTCAGTTATGAG-----
Ophisaurus CTGCCA-----
CAACATCCTGGTTATATCAATTTTCAGTTATGAG-----
Shinisaurus CTGCCA-----
CAACATCCTGGTTATATCAATTTTCAGTTATGAG-----
Boa_constrictor CTACCA-----
CAACATCCTGGTTATATCAATTTGAGTTATGAG-----
Thamnophis CTACCA-----
CAACATCCTGGTTATATCAATTTTCAGTTACGAG-----
Crotalus_horrid CTACCA-----
CAACATCCTGGTTATATCAATTTTCAGTTATGAG-----
Crotalus_mitche CTACCA-----
CAACATCCTGGTTATATCAATTTTCAGTTATGAG-----
Protobothrops CTACCA-----
CAACATCCTGGTTATATCAATTTTCAGTTATGAG-----
Vipera CTACCA-----
CAACATCCTGGTTATATCAATTTTCAGTTATGAG-----
Python_mulurus CTACCA-----
CAACATCCTGGTTATATCAACTTCAGTTATGAG-----
Cobra CTACCA-----
CAACATCCTGGTTATATCAATTTTCAGTTATGAG-----
Pantherophis CTACCA-----
CAACATCCTGGTTATATCAATTTTCAGTTATGAG-----
Ctenosaurs TTGCCA-----
CAGCATCCTGGTTTTATCAATTTTCAGTTATGAG-----
Pogona CTACCC-----
CAACATCCTGGTTTTATCAATTTTCAGCTATGAG-----
Eublepharis CTGCCT---
CATGCACAACATCCTGGCTATATTAATTTTCAGTTATGAG-----

MournGekko CTGCCT---
CACGCACAACATCCTGGCTATATCAATTTTCAGTTATGAG-----
Gekko_japon CTGCCT---
CACGCACAACATCCTGGCTATATCAATTTTCAGTTATGAG-----
Aspidoscelis CTGCCA-----
CAACATCCTGGTTATATCAATTTTCAGTTATGAG-----

Allig_sinensis -----
GTGTTAACACCTTTGAAATGGTACCAGAGC
Allig_mississip -----
GTGTTAACACCTTTGAAATGGTACCAGAGC
Crocodilus_poro -----
GTGTTAACACCTTTGAAATGGTACCAGAGC
Gharial -----
GTGTTAACACCTTTGAAATGGTACCAAAGC
Paleosuchus -----
GTGTTAACACCTTTGAAATGGTACCAGAGC
M.musculus -----
GTGCTTACCCCTTTGAAGTGGTACCAGAGC
Rattus -----
GTGCTTACCCCTTTGAAGTGGTACCAGAGC
Sus -----
GTGCTTACCCCTCTGAAGTGGTACCAGAAC
Bos -----
GTGCTCACCCCTCTGAAGTGGTACCAGAGC
Human -----
GTGCTTACCCCTTTGAAGTGGTACCAGAGC
Equus -----
GTGCTTACCCCTCTGAAGTGGTACCAGAGC
Ursus
CAGGCTATCAATATTGACAGGACTGCATCAGTGCTTACCCCTCTGAAGTGGTACCAGAAC
Tursiops
CAGGTTGTCCGATTGACGGGACTGCATCAGTGCTTACCCCTCTGAAGTGGTACCAGAAC
Ornithorhynchus -----
GTGCTTACCCCTTTACAATGGTACCAAAT
Cavia
AACGCTATCAATATTGACAGGACTGCATTAGTGCTTACTCCTTTGAAGTGGTACCAGAGC
Monodelphis -----
GTGCTTACCCCTTTGAAATGGTATCAAAGC
Anolis -----
GTAATGACACCTTTAAAATGGTACCAGAGC
Ophisaurus -----
GTAATGACACCTTTAAAATGGTACCAGAGC
Shinisaurus -----
GTAATGACACCTTTAAAATGGTACCAGAGC
Boa_constrictor -----
GTAATGACACCTTTGAAATGGTATCAGAGC

Thamnophis -----
GTGATGACACCTTTGAAATGGTATCAGAGC
Crotalus_horrid -----
GTGATGACACCTTTGAAATGGTATCAGGGC
Crotalus_mitche -----
GTGATGACACCTTTGAAATGGTATCAGGGC
Protobothrops -----
GTGATGACACCTTTGAAATGGTATCAGGGC
Vipera -----
GTGATGACACCTTTGAAATGGTATCAGGGC
Python_mulurus -----
GTAGTGACACCTTTGAAATGGTATCAGAGC
Cobra -----
GTGTTGACACCTTTGAAATGGTATCAGAGC
Pantherophis -----
GTGATGACACCTTTGAAATGGTTTCAGAGC
Ctenosaurs -----
GTAATGACACCTTTAAAATGGTACCAGAGC
Pogona -----
GTAATGACACCTTTGAAATGGTACCAGGGT
Eublepharis -----
GTAATGACACCTTTAAAATGGTACCAGAGC
MournGekko -----
GTAATGACACCATTAAAATGGTACCAGAGC
Gekko_japon -----
GTAATGACACCATTAAAATGGTACCAGAGC
Aspidoscelis -----
GTACTGACACCTTTAAAATGGTACCAGAGC

Allig_sinensis
CTGATGAGACAACCGTATTCATCCTATGGGTATGAACCAATGGGAGGATGGCTACACCAG
Allig_mississip
CTGATGAGACAACCGTATTCATCCTATGGGTATGAACCAATGGGAGGATGGCTACACCAG
Crocodilus_poro
CTGATGAGACAACCGTATTCATCCTATGGGTATGAACCAATGGGAGGATGGCTACACCAG
Gharial
CTGATGAGACAACCGTATTCATCCTATGGGTATGAACCAATGGGAGGATGGCTACACCAG
Paleosuchus
CTGATGAGACAACCGTATTCATCCTATGGGTATGAACCAATGGGAGGATGGCTACACCAG
M.musculus
ATGATAAGGCAGCCGTATCCTTCCTATGGTTACGAACCCATGGGTGGATGGCTGCACCAC
Rattus
ATGATAAGGCAGCCGCATCCTTCCTATGGTTACGAACCCATGGGTGGATGGCTGCACCAC
Sus
ATGATAAGACATCCGTACACTTCCTATGGGTACGAACCCATGGGTGGATGGCTGCACCAC
Bos
ATGATAAGACACCCGTACCCTTCCTATGGTTACGAACCCATGGGTGGATGGCTGCACCAC

Human ---
ATAAGGCCACCGTACCCTTCCTATGGTTACGAGCCCATGGGTGGATGGCTGCACCAC
Equus
TTGATCAGGCAGCCGTACACTTCCTATGGTTACGAACCCATGGGTGGATGGCTGCACCAC
Ursus
ATGATAAGGCATCCGTACCCTTCCTATGGTTACGAACCCATGGGTGGATGGCTGCACCAC
Tursiops
GTAATAAGACACCCGTACCCGTCCTACGGTTACGAACCCATGGGTGGCTGGCTGCGTCAC
Ornithorhynchus
ATGAAGCGCAGCAGTACCCCTCTTATGGTTATGAGCCCATGGGCGGATGGCTTCACCAC
Cavia
ATGATAAGGCAGCCGTATCCTTCCTATGGTTACGAATCCATGGGTGGATGGGTGCACCAC
Monodelphis
ATGATGCGACAGCAGTATCCCTCCTATGGTTATGAACCCATGGGTGGATGGCTGCATCAC
Anolis
CTAATAGGACACCAGTATCCACGTTATGGCTTTGAACCAATGGGAGGATGGATGCACCAT
Ophisaurus
CTAATTGGGCATCAGTATCCACGGTATGGCTATGAGCCCATGGGAGGATGGATGCACCAC
Shinisaurus
CTAATTGGGCATCAGTATCCACGTTATGGCTATGAGCCCATGGGAGGATGGATGCACCAC
Boa_constrictor
ATAATCGGACACCAGTATCCACGTTATGGCTATGAGCCCATGGGAGGATGGATGCACCAT
Thamnophis
ATAATTGGACATCAGTATCCACGTTACGGCTATGAGCCCATGGGAGGGTGGATGCACCAT
Crotalus_horrid
ATAATTGGACATCAGTATCCACGTTATGGCTATGAGCCCATGGGAGGATGGATGCACCAT
Crotalus_mitche
ATAATTGGACATCAGTATCCACGTTATGGCTATGAGCCCATGGGAGGATGGATGCACCAT
Protobothrops
ATAATTGGACATCAGTATCCACGTTATGGCTATGAGCCCATGGGAGGATGGATGCACCAT
Vipera
ATAATTGGACATCAGTATCCACGTTATGGCTATGAGCCCATGGGAGGATGGATGCACCAT
Python_mulurus
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Cobra
ATAATTGGACCTCAGTATCCACGTTATGGTTATGAGCCCATGGGAGGATGGATGCACCAT
Pantherophis
ATAATTGGACACCAGTATCCACGTTACGGCTATGAGCCCATGGGAGGGTGGATGCACCAT
Ctenosaurs
CTAATGGGACCCAGTATCCACGTTATGGTTATGAACCAATGGGAGGATGGATGCGCCAT
Pogona
GTAATGGGACACCAGTATCCACGTTATGGTTACGAGCCAATGGGAGGATGGATGCACCAC
Eublepharis
CTGATTGGACACCAGTATCCACGTTATAGCTATGAACCTATGGGAGGATGGATGCACCAC
MournGekko
CTGATTGGACACCAGTACCCACGTTATAGCTATGAACCTATGGGAGGATGGATGCACCAC
Gekko_japon

CTGATTGGACACCAGTACCCACGTTATAGCTATGAACCTATGGGAGGATGGATGCACCAC
Aspidoscelis
TTAGTTGGACCCAGCTTCCGCATTATGGCTATGGGCCCATGGCAGGTTGGATTCAACAT

Allig_sinensis CCAATGTTACCAATA-----
GCCCAACAG-----CATCCA
Allig_mississip CCAATGTTACCAATA-----
GCCCAACAG-----CATCCA
Crocodilus_poro CCAATGTTACCAATA-----
GCCCAACAG-----CATCCA
Gharial CCAATGTTACCAATA-----
GCCCAACAG-----CATCCA
Paleosuchus CCAATGTTACCAATA-----
GCCCAACAG-----CATCCA
M.musculus CAAATCATCCCTGTGCTG---
TCTCAACAG-----CATCCC
Rattus CAAATCATCCCTGTGCTG---
TCTCAACAG-----CATCCC
Sus CAAATCATACCCGTGGTG---
TCGCAGCAG-----ACTCCC
Bos CAAATCATTCCCGTGGTG---
TCCCAGCAG-----ACTCCC
Human CAAATCATCCCCGTGCTG---
TCCAACAG-----CACCCC
Equus CAAATCATCCCCGTGCTG---
TCCCAGCAG-----AATCCC
Ursus CAAATCATTCCCGTGGTG---
TCCCAGCAG-----AATCCC
Tursiops CAAATCATTCCCGTGGTA---
TCCCAGCAG-----
Ornithorhynchus CAGATAATCCCCGTGCTG---
TCCCAGCAA-----CAGACC
Cavia CAAGTCATCCCCGTGCTG---
TCTCAACAG-----CATCCC
Monodelphis CAAATCATCCCAGTGCTA---
TCTCAGCAG-----CATAGC
Anolis GCTGCAGGACCAACAATG---
CACCAAACCTACCTTCCAAAGCCATCCTTCAGTGCACTCA
Ophisaurus AGTACAGGGCCAATGACG---CACCAACCTTACTTTCAAGGG---
AATCCAATGCAC---
Shinisaurus ACTTCTGGGCCCGTGACG---
CACCAAACCTCACTTTCAAGGGCTCCATCCAATGCACCCT
Boa_constrictor AATGCAGGGCCAGTGATG---
CACCAAACCTCACTTTTCATGGGGTCCATGCAATGCACCCA
Thamnophis AATGCAGGACCATTGATG---
CACCAAACCTCACTTTTCATGGGGTCCATGCAATACACCCA
Crotalus_horrid AATGCAGGACCAATGATG---

CACCCAAC TCACTTTTCATGGGGTCCATGCAATACACCCA
Crotalus_mitche AATGCAGGACCAATGATG---
CACCCAAC TCACTTTTCATGGGGTCCATGCAATACACCCA
Protobothrops AATGCAGGACCAATGATG---
CACCCAAC TCACTTTTCATGGGGTCCATGCAATACACCCA
Vipera AATGCAGGACCAATGATG---
CACCCAAC TCACTTTTCATGGGATCCATGCAATACACCCA
Python_mulurus AACGCAGGGCCACTGATG---
CACCCAAC TCATTTTCATGGGGTCCATGCAATGCACCCA
Cobra AATTCAGGACCAGTGACG---CACCCAAC TCACTTT-----
CATGCAATTCACCCA
Pantherophis AATGCAGGACCAATGATG---
CAACCACCTCACTTTTCATGGGGTCCATGCAATACACCCA
Ctenosaurs GCTACAGGACCAATGATG---
CACCAAAC TCACATTCAAACCTTCCTCCAATGCACTCG
Pogona AGTCCAGGGTCAATGATG---
CACCAAGCTCCCTTTCAAAC TCTCCATCCAATGCCACCA
Eublepharis
CATACAGGGCCAGCGATGCCTCCCCACTCTTCTTTTCCAGGCTTCCAGCAAATTCATGCA
MournGekko CATA CAGGGCCT-----
CACCACTCTCCTTATCTAGGTTTCCAGCAAATTCATCCA
Gekko_japon CATA CAGGGCCT-----
CACCACTCTCCTTATCTAGGTTTCCAGCAAATTCATCCA
Aspidoscelis TCTGGAGGACCAGCGATG---
CCCCATGCTCAATTTCAA-----ATGCACAAC

Allig_sinensis CCCATCCAG---ACTCTCACACCTCACCAC---
CAGATCCCCTTCCTG-----
Allig_mississip CCCATCCAG---ACTCTCACACCTCACCAC---
CAGATCCCCTTCCTG-----
Crocodilus_poro CCCATCCAG---ACTCTCACACCTCACCAC---
CAGATCCCCTTCCTG-----
Gharial CCCATCCAG---ACTCTCACACCTCACCAC---
CAGATCCCCTTCCTG-----
Paleosuchus CCCATCCAG---ACTCTCACACCTCACCAC---
CAGATCCCCTTCCTG-----
M.musculus CCGAGTCAC---ACCCTTCAGCCTCATCAC---
CACCTTCCCGTGGTGCCAGCTCAACAG
Rattus CCGAGTCAC---ACCCTTCAGCCTCATCAC---
CACCTCCCAGTGGTGCCAGCTCAACAG
Sus CAGAGTCAT---GCCCTTCAGCCTCATCAC---
CACATCCCCATGGTGCCAGCTCAACAG
Bos CAGAATCAC---GCCCTGCAGCCTCATCAC---
CACATCCCCATGGTGCCAGCTCAGCAG
Human CCGACTCAC---ACCCTGCAGCCTCATCAC---
CACATCCCAGTGGTGCCAGCTCAGCAG
Equus TCAAATCAC---GCCTTGCAGCCTCATCAC---

CATATCCCCATGGTGTCGGCTCAGCAC
 Ursus CCGAATCAC---GCCCTGCAGCCTCATCAC---
 CACATCCCCATGGTGCCAGCTCAGCAG
 Tursiops -----GCT---GCCCTGCAGCCTCATCAC---
 CACTTCCCCATGGTGCCAGCCCAGCAG
 Ornithorhynchus CCGACTCAC---GCGCTGCAGCCCCACCAC---
 CACATCCCCGTCATGGCCGCCAACAG
 Cavia CCGAGTCACACCACCCTTCCGCCTCATCAC---
 CACATCCCAGTGGGGCCAGCTCAGCAG
 Monodelphis CCAAGTCAT---TCCTTACCGCCTCAACAC---
 CATATCCCCATCATGGCCGCCAGCAG
 Anolis ACTCTCCAT---
 CAAATGCAGCCACCACAT-----
 Ophisaurus ---CTACAT---
 CCAATGCAGCCCCAGCAG-----
 Shinisaurus ---CTCCAT---
 CAAATACACCCGCAGCAG-----
 Boa_constrictor GCTCTCCAT---
 CAAATGCAGCCACAACAG-----
 Thamnophis GCTCTCCAT---
 CAGATGCAGCCACAGCAG-----
 Crotalus_horrid GCTCTCCAT---
 CAAATGCAACCACTACAG-----
 Crotalus_mitche GCTCTCCAT---
 CAAATGCAACCACTACAG-----
 Protobothrops GCTCTCCAT---
 CAAATGCAACCACTACAG-----
 Vipera GCTCTTCAT---
 CAAATGCAACCACTACAG-----
 Python_mulurus TCTCTCCAT---
 CCAATGCAGCCACAACAG-----
 Cobra GCTCTCCAT---
 CAAATGCAGCCACCACAG-----
 Pantherophis GCTCTCCAT---
 CAAAAGCAGCCACATCAG-----
 Ctenosaurs CCTATCCAT---
 CAGATGCAGCCACAGCAC-----
 Pogona CCTCTCCAC---CAGGTGCAG---
 CAACAG-----
 Eublepharis CCATCCCAC---
 CAAATGCACCCCTCACAGCAACACCTGCAA-----
 MournGekko CTGCCCCAC---
 CAAATGCATCCCTCACAGCAACACTTG-----
 Gekko_japon CTGCCCCAC---
 CAAATGCATCCCTCACAGCAACACTTG-----
 Aspidoscelis CCTCTTCAT---
 CAAGTACAGCCACATCTG-----

Allig_sinensis -----
TCACCCCAGCATCCGCTGATGCAAATGCCAGGTCCACATCAAATGATGCCTATA
Allig_mississip -----
TCACCCCAGCATCCGCTGATGCAAATGCCAGGTCCACATCAAATGATGCCTATA
Crocodilus_poro -----
TCACCCCAGCACCCACTGATGCAAATGCCAGGTCCACAACAAATGATGCCTATA
Gharial -----
TCACCCCAGCACCCGCTGATGCAAATGCCAGGTCCACAACAAATGATGCCTATA
Paleosuchus -----
TCACCCCAGCACCCACTGATGCAAATGCCAGGTCCACATCAAATGATGCCTATA
M.musculus
CCCGTGGCCCCCAGCAACCAATGATGCCAGTTCCTGGCCACCACTCCATGACTCCAACC
Rattus
CCCGTGGCCCCCAGCAACCAATGATGCCAGTTCCTGGCCACCACTCCATGACTCCAACC
Sus
CCCGGGATCCCCCAGCAGCCAATGATGCCACTTCCTGGCCAACACTCCATGACTCCAACC
Bos
CCCGTGGTCCCCCAGCAACCAATGATGCCAGTTCCTGGCCAACACTCCATGACTCCAACC
Human
CCCGTGATCCCCCAGCAACCAATGATGCCCGTTCCTGGCCAACACTCCATGACTCCAATC
Equus
CCTGTGGTCCCCCAGCAACCAATGATGCCACTTCCTGGCCAACACTCCATGGTTCCAACC
Ursus
CCCGTGGTCCCCCAGCAACCAATGATGCCACTTCCTGGCCAACACTCCATGACTCCAACC
Tursiops
CCCGTGGGCCCCCAGCAAACCATGATGCCAATTCCTGGCCAGCACTCCATGACTCCAAGC
Ornithorhynchus
CCGATGCAGCCCCAGCAGCCAATGATGCCGATGCCAGGCCAGCCCTCCGTGACCCCGACG
Cavia
CCCGTGGTCCCCCAGCAACCACTGATGCCAGTTCCTGGCCACCACTCCATGACTCCAAC
Monodelphis
CCAGCGCCACCCAGCAACCACTGATGCCAGTACCAGGACAGCACCCCATGGCACCAACA
Anolis -----
CCAGCACTGAACCCACACATGCAGCCACCTGGGCACAACCCATTTGGGCCAATG
Ophisaurus -----
CCACCCATAACCCACACATGCAGTATCCTGGCCATAACTCATACGGGCCAATG
Shinisaurus -----
CCACCTGTGAATCCACCCATGCAGCAGCCTGGGCATAACCCATTTGTGCCGATG
Boa_constrictor -----
CCACCTACAATCCACATTTGCAGCAACCTGGTCATAACCCATTTGTCCAATT
Thamnophis -----
CCTCCTCAGAACCCACATTTGCAGCAACCAAGGCCTTAACCCATTTGTTCAACTA
Crotalus_horrid -----
CCCCCTCAGAACCCACATTTGCAGCAACCAAGGTCTTAACCCATTTGTTCCACTA
Crotalus_mitche -----
CCCCCTCAGAACCCACATTTGCAGCAACCAAGGTCTTAACCCATTTGTTCCACTA

Protobothrops -----
 CCCCCTCAGAACCCACATTTGCAGCAACCAGGTCTTAACCCATTTGTTCCACTA
 Vipera -----
 CCCCCTCAGAACCCACATTTGCAGCAACCAGGTCTTAACCCATTTGTTCCATTA
 Python_mulurus -----
 CCACCTCAGAACCCACATCTGCAGCAACCTGGCCATAACCCATTTATCCCAATA
 Cobra -----
 CTCCTCAGAACCCACATTTGCAGCAACCAGGTCTTAACCCATTTGTTCCACTA
 Pantherophis -----
 CTTCTCAGAACCCACAATTGCAGCAACCAGGCCTTAATGCATTTGTTCCACTA
 Ctenosaurs -----
 CAAATTCTGAACCCACAAATGCCACAACCAGGGCACAACGGATTTGTGCCACTG
 Pogona -----
 CCTCTCTGAACCCACACATGCAGCTACCTGGGCATAACACACTTGTGCCAATG
 Eublepharis -----
 CCACCCCTGAACACACCAGTGAACCAGCTGGGCATAGCCCTTTTGGTCACATG
 MournGekko -----
 CCACCTATGAACACACCACTGCAACCAGTTGGGCATGCCCTTTTGGTCAAATG
 Gekko_japon -----
 CCACCTATGAACACACCACTGCAACCAGTTGGGCATGCCCTTTTGGTCAAATG
 Aspidoscelis -----
 CAATCTTTCCATCACATCCAGCCTATCACCCAATAGGCCCCATG

Allig_sinensis
 CCACAGCAACAACCAAGCCTACAAATG-----CCAGTCCAAGAG
 Allig_mississip
 CCACAGCAACAACCAAGCCTACAAATG-----CCAGTCCAAGAG
 Crocodilus_poro
 CCACAGCAACAACCAAGCCTGCAAATG-----CCAGTCCAAGAA
 Gharial
 CCACAGCAACAACCAAGCCTGCAAATG-----CCAGTCCAAGAA
 Paleosuchus
 CCACAGCAACAACCAAGCCTACAAATG-----CCAGTCCAAGAG
 M.musculus CAACACCATCAGCCAAACATCCCTCCA-----
 TCCGCCAGCAGCCCTTCCAGCAG
 Rattus CAACACCATCAGCCAAACATCCCTCCA-----
 TCCGCCAGCAGCCCTTCCAGCAG
 Sus
 CAACACCACCAGCCAAACCTCCCTCTG-----CCCGCCAGCAG
 Bos
 CAACACCACCAGCCAAACCTCCCTCTG-----CCCGCCAGCAG
 Human
 CAACACCACCAGCCAAACCTCCCTCCG-----CCCGCCAGCAG
 Equus
 CAACACCACCAGCCAAACCTCCCTCCA-----CCTGTCCAGCAG
 Ursus
 CAACACCACCAGCCAAACCTCCCTCTG-----CCTGCCAGCAG

Tursiops
CAACCCACCAGCCACACCTCCCTGTG-----CCCGCCCAGCAG
Ornithorhynchus
CAGCACCATCAGTCAAACCTCCCTCAG-----CCGGCCCAGCAA
Cavia
CAACACCACCAGCCTAACCTCCCACCA-----ACCTCCCAGCAG
Monodelphis
CAACACCATCAACCCAACCTCCCACAG-----CCAGGCCAACAA
Anolis
CCTGGTCAAATACATTGATGCCCCAGTTTCAACCAGCTCATGGAGGACCAATTCATCAT
Ophisaurus
ACTGGACAAGATACATTAATGCCACACTACCCACCACCTCAAGTAGGACCAGTCCAACAT
Shinisaurus
ACTGGGCAAATCCATTAATGCCACAATATCAACCAACTCACACAGGAACAGTCCAGCAT
Boa_constrictor
CATGGGCATAACACATTAATTCACACTATCAG-----CCTGTACAACAT
Thamnophis
AATGGGCATAATGCATTAATTCACACTATCTG-----CCTATACAGCAT
Crotalus_horrid
AATGGGCATAACACATTAATTCACACTATCAG-----TCTGTACAGTAT
Crotalus_mitche
AATGGGCATAACACATTAATTCACACTATCAG-----TCTGTACAGTAT
Protobothrops
AATGGGCATAATACATTAATTCACACTATCAG-----TCTGTACAGTAT
Vipera
AATGGGCATAATACATTAATGCCACACTATCAG-----TCTATACAGTAT
Python_mulurus
ACTGGGCATAACCCATTAATTCACACTATCAG-----CCTATACAACAT
Cobra
AATGGGCATAATACATTAATTCACACTATCAG-----TCTATACAGCAT
Pantherophis
AATGGGCATAATGCATTAATTCACACTAT-----CAGCAT
Ctenosaurs
CCTGGTCAAATACATTGATGCCGCAGTTTCAA-----CCAGCTCATGGA
Pogona
ACTGGGCAGAGTACATTAACGCCACAGTATCAACCAGCTCATGCAGGTCCAGTTCACCAG
Eublepharis CCTGGACAAAACACA---ATGCCACAGTACCAGCCA-----
GGAGTAGCAGTGCAACAC
MournGekko CCTGGACAAAACACA---ATGCCACACTACCCGGCA-----
GGAGTACCAGTTCAAAC
Gekko_japon CCTGGACAAAACACA---ATGCCACACTACCCGGCA-----
GGAGTACCAGTTCAAAC
Aspidoscelis
CCTGGCCAAAATGGAATAGTCCCACATTATCCTCAG-----CCTCAGCAACAT

Allig_sinensis CCAGTCCAA-----
CCACAGGCAGGTGAACATCCAAGCCA-----

Allig_mississip CCAGTCCAA-----
 CCACAGGCAGGTGAACATCCAAGCCCA-----
 Crocodilus_poro CCAGTCCAA-----
 CCACAGCCAGGTGAACATCCAAGCCCA-----
 Gharial CCAGTCCAA-----
 CCACAGGCAGGTGAACATCCAAGCCCA-----
 Paleosuchus CCAGTCCAA-----
 CCACAGGCAGGTGAACATCCAAGCCCA-----
 M.musculus CCCTTCCAG-----CCCCAGGCCATTCCA---
 CCCCAGTCTCAT-----
 Rattus CCCTTCCAG-----CCCCAGGCCATTCCA---
 CCCCAGTCTCAT-----
 Sus CCCTTCCAG-----CCCCAGCCCGTCCAG---
 CCCCAGCCTCAC-----
 Bos CCCTTCCAG-----CCCCAGTCCATCCAG---
 CCGCAGCCTCAC-----
 Human CCCTACCAG-----CCCCAGCCTGTTCAG---
 CCACAGCCTCAC-----
 Equus CCCTTCCAC-----CCCCAGCCTGTTCAG---
 CCGCAGCCTCAC-----
 Ursus CCCTTCCAG-----CCCCAGCCCGTCCAG---
 CCACAGCCTCAC-----
 Tursiops CCCGTCCAG-----
 CCACAGCCT-----
 Ornithorhynchus CCCTTCCAG-----CCCCAGGTTCCCCAG---
 CAGCCGCTCAC-----
 Cavia CCCTTCCAGCAACCCTTCCCCACCCAACCTGTTCAG---
 CCACAGCACCAC-----
 Monodelphis CCATACCAG-----
 CCCCAGCCAGCCAGCAACCACAGCCTCACCAGCCCATC
 Anolis CCATTCCAA-----
 CCACATGCAGGAGAA-----
 Ophisaurus CCGCCTCCA-----
 CCACACGCAGGAGAG-----
 Shinisaurus CCACTTGTA-----
 CCACATGCAGGAGAG-----
 Boa_constrictor CCATTTCAA-----
 CCACAAGCTGGGGAG-----
 Thamnophis CCACTTCAA-----
 CCACAAGCAGGCGAG-----
 Crotalus_horrid CCACTTCAA-----
 CCACAAACAGGCGAG-----
 Crotalus_mitche CCACTTCAA-----
 CCACAAACAGGCGAG-----
 Protobothrops CCACTTCAA-----
 CCACAAACAGGCGAG-----
 Vipera CCACTTCAA-----

CCACAAACAGGCGAG-----
Python_mulurus CCACTTCAG-----
CCACAAGCAGGAGAG-----
Cobra CCACTTCAA-----
CCACAAGCAGGCGAG-----
Pantherophis CCACTTCAA-----
CCACAAGCAGGCGAG-----
Ctenosaurs GCACTACCA-----
CCACAAATAGGAGAA-----
Pogona CCATTTCCA-----
CCAGTTGCAGGAGAG-----
Eublepharis CCATTTCCA-----
CCACATGCAGGAGAG-----
MournGekko CCA-----
CCACATGCAGGAGAG-----
Gekko_japon CCA-----
CCACATGCAGGAGAG-----
Aspidoscelis CCACCTCCA-----
CCCCCAGCAGGAGAA-----

Allig_sinensis -----
CCACTGCAGCCCCAACAACCTGGGCATCCG
Allig_mississip -----
CCACTGCAGCCCCAACAACCTGGGCACCCG
Crocodilus_poro -----
CCAGTGCAGCCCCAACAACCTGGGCATCCA
Gharial -----
CCAGTGCAGCCCCAACAACCTGGGCATCCA
Paleosuchus -----
CCAGTGCAGCCCCAACAACCTGGGCACCCG
M.musculus

Rattus

Sus

Bos -----
CAGCCCCTGCAGCCTCACCAGCCCCTGCAGCCCATGCAGCCCATGCAGCCC

Human

Equus

Ursus

Tursiops

Ornithorhynchus

Cavia -----
CAGCCCATTCAGCCCATTCAACCCATCCAACCT
Monodelphis
CAGCCCATCCAGCCCATCCAGCCCATCCAGCCCATCCAGCCCATGCAGCCCATGCAGCCC
Anolis

Ophisaurus

Shinisaurus

Boa_constrictor

Thamnophis

Crotalus_horrid

Crotalus_mitche

Protobothrops

Vipera

Python_mulurus

Cobra

Pantherophis

Ctenosaurs

Pogona

Eublepharis

MournGekko

Gekko_japon

Aspidoscelis

Allig_sinensis
AATCCACCGATGCAGCCTCAGCTACCTGGGAGTCCACACCCACCAATGCAGCCCCAGCAG
Allig_mississip
AATCCACCGATGCAGCCTCAGCTACCTGGGAGTCCACACCCACCAATGCAGCCCCAGCAG
Crocodilus_poro

AATCCACCGATGCAGCCTCAGCTACCTGGGAGTCCACACCCACCAATGCAGCCCCAGCAA
Gharial
AATCCACCAATGCAGCCTCAGCTACCTGGGAGTCCACACCCACCAATGCAGCCCCAGCAA
Paleosuchus
AATCCACCGATGCAGCCTCAGCTACCTGGGAGTCCACACCCACCAATGCGGCCCCAGCAG
M.musculus -----
CAGCCCATGCAGCCCCAGTCACCTCTGCATCCCATGCAGCCCCTGGCA
Rattus -----
CAGCCCATGCAGCCCCAGTCACCTCTGCATCCCATGCAGCCCCTGGCA
Sus -----
CAGCCCCTGCAGCCCCAGTCACCCATGCACCCATCCAGCCCTTGCTG
Bos
TTGCAGCCCCTGCAGCCCCTGCAGCCCCAGCCACCTGTGCACCCCATCCAGCCCTTGCCG
Human -----
CAGCCCATGCAGCCCCAGCCACCTGTGCACCCCATGCAGCCCCTGCCG
Equus -----
CAGCCCATCCAGCCTCAGCCACCTCTGCACCCCATCCAGCCCCTGCCG
Ursus -----
CACCCATCCAGCCCCTGCCA
Tursiops -----
CACCG-----CCCCTGCTG
Ornithorhynchus -----
CAGCCAATCCAGCCCCAGGCCCCGGCGCACCCCATGCCACCGATG---
Cavia
ATCCAGCCCATCCAGCCCATCCAGCCCCAGTCACCACTGCACCCCATCCAGCCCCTGCCA
Monodelphis
ATGCAGCCCATGCAGCCCATGCAGCCCCAGACCCAGTCCATGCAGTGCTACCCTTGCCA
Anolis ---
CACCCAATGCACCCTCAGCAAACAGGGAATCCAGTCCACCCAATGCATCCTCAGCAA
Ophisaurus ---
TACCCAATGCACCCCCAGCAACCAGGGAACCGAAATCACCCAATGCACCCTCAGCAA
Shinisaurus ---
CACCCAATGCACCCCCAGCAACCAGGGAACCCAAATCAGCCAATGCACCCTCAGCAA
Boa_constrictor ---
CATCCAATGCAACCCCAGCCACCAGTGAATCCAAATCAATCAATGCACCCTCAGCAA
Thamnophis ---
CATCCAATGCAACCCCAACCACCAGTAAATCCAAATCAATCAATGAACCCCTCAGCAA
Crotalus_horrid ---
CATCCAATGAAACCCCAGCCACCAGTAAATCCAAATCAATCAATGAACCCCTCAGCAA
Crotalus_mitche ---
CATCCAATGAAACCCCAGCCACCAGTAAATCCAAATCAATCAATGAACCCCTCAGCAA
Protothrops ---
CATCCAATGAAACCCCAGCCACCAGTAAATCCAAATCAATCAATGAACCCCTCAGCAA
Vipera ---
CATCCAATGAAACCCCAGCCACCAGTAAATCCAAATCAATCAATGAACCCCTCAACAA
Python_mulurus ---CATCCAATGCAG-----
CCAGTGAATCCAAACCAATCAGTGCACCCTCAACAA

Cobra ---
CATCCAATGCAACCCCAACCACCAATAAATCCAAATCAATCTATGAACCCTCAGCAA
Pantherophis ---CATCCAATGCAACCCCTACCACCAGTAAATCCA-----
ATGAACCCTCAGCAA
Ctenosaurs ---
CACCCAATGTATCCCCAGCAACATGGGAATCCAATGCCGCAATCCACCCTCAGCAA
Pogona ---
GCACCGATGCAACCTCAACTACCAGCACATCCAAATCAGCCAATGCACCCTCAGCTA
Eublepharis ---
CATCCTGTGCATCACCAGCAACCTGGGAATCCAAACCAGCCAATGCAGCCTGGCAAT
MournGekko ---
CATCCTGGGCACCACCAGCAGCCTGGGAATCCAAACCACCCAATGCAGCCTGGCGGT
Gekko_japon ---
CATCCTGGGCACCACCAGCAGCCTGGGAATCCAAACCACCCAATGCAGCCTGGCGGT
Aspidoscelis ---
CATCCAAGTCACCCCTATCAGCCAGTGAATGGAGTTCAGCCACAACATCCCCTAACA

Allig_sinensis
CCTGGGATTCCAAACCCACCAATGTACCCAATGCAGCCATTGCCACCACTGCTGCCGGAC
Allig_mississip
CCTGGGATTCCAAACCCACCAATGTACCCAATGCAGCCATTGCCACCACTGCTGCCGGAC
Crocodilus_poro
CCTGGGATTCCAAACCCACCAATGTACCCAATGCAGCCATTGCCACCACTGCTGCCGGAC
Gharial
CCTGGGATTCCAAACCCACCAATGTACCCAATGCAGCCATTGCCACCACTGCTGCCAGAT
Paleosuchus
CCTGGGATTCCAAACCCACCAATGTACCCAATGCAGCCATTGCCACCACTGCTGCCGGAC
M.musculus
CCACAGCCACCTCTGCCTCCACTGTTCTCCATGCAGCCCCTGTCCCCATTTCTTCCTGAG
Rattus
CCACAGCCACCTCTGCCTCCACTGTTCTCCATGCAGCCCCTGTCCCCATTTCTTCCTGAG
Sus
CCACAGCCACCTCTGCCTCCGATGTTCTCCATGCAGTCTCTG-----CTTCCTGAC
Bos
CCACAGCCACCTCTGCCTCCGATATTCCCCTGCAGCCTTGCCCCCATGCTTCCTGAC
Human
CCACAGCCACCTCTGCCTCCGATGTTCCCCTGCAGCCCCTGCCTCCCATGCTTCCTGAT
Equus
CCACAGCCACCTCTGCCTCCGATATTCCCCTGCAGCCCCTTGCCCCCATGCTTCCTGAC
Ursus
CCACAGCCACCTCTGCCTCCGATGTTCCCCTGCAGCCCCTGCCTCCCATGCTTCCTGAC
Tursiops
CCCCAGCCGCTCTGCCTCCGATGTTCCCCTGCAGCCCCTGCCTCCCATGCTTCCTGAC
Ornithorhynchus
CCACAGCCGCTCTGCCTCCGATGTTCCCCTGCAGCCTTGCCCCGCTGCTGCCAGAC
Cavia
CCACAGCAAGCTCTGCCTCCAATGTTCTCCATGCAGCCCATTGCCCTTCTTCCTGAT

Monodelphis
 CCACAGCCACCTCTGCCTCCAATGTTCCCCATGCAGCCAATGTCCCCATGCTGCCAGAT
 Anolis
 CCAGCAAATCCAAATTCACCAATTTACCCAGTTCAGCAATTGCCACCACTGATATCAGAT
 Ophisaurus CCAGGGAATCCTAACCAGCCAATGTATCCAATTCAG-----
 CCTCCACTGATCCCAGAT
 Shinisaurus
 CCAGGGAATCCTGTCCACCCAATGTATCCAATTCAGCCGATGCCTCCACTGATCCCAGAT
 Boa_constrictor CCAGGGAATGCCAATCAGCCCATATATCCA-----
 CTACCTCCACTTATCCCAGAT
 Thamnophis CCAGGGAATGCCAATCAGCCCATGTACCCA-----
 CTACCTCCCCTTATTCCAGAT
 Crotalus_horrid TCAGGGAATGCCAATCAGCCCATATACCCA-----
 CTACCTCCCCTTATCCCAGAT
 Crotalus_mitche TCAGGGAATGCCAATCAGCCCATATACCCA-----
 CTACCTCCCCTTATCCCAGAT
 Protobothrops TCAGGGAATGCCAATCAGCCCATATACCCA-----
 CTACCTCCCCTTATCCCAGAT
 Vipera TCAGGGAATGCCAATCAGCCCATATATCCA-----
 CTACCTCCCCTTATCCCAGAT
 Python_mulurus CCAGGGAGTGCCAATCAGCCCATATATCCA-----
 CTACCTCCACTTATCCCAGAT
 Cobra CCAGGGATTGCCAATCAGCCCATGTACCCA-----
 CTACCACCCCTTATCCCAGAT
 Pantherophis CCAGGGAATGCCAATCAGCCCATGTACCCA-----
 CTACCTCCCCTTATCCCAGAT
 Ctenosaurs
 CCAGCAAATCCGAATCCACCAATGTACCCAGTTCAGCCACATGCACCAGTGTTCCCAGAC
 Pogona
 CCAGCACATCCAAATCAGCCAATGTTCCCAATGCAGCCACTGCCTCCACTGATGCCAGAT
 Eublepharis
 CCAAACCAGCCAGTTTACCAAGTGCATCCAGTGCCTCCACTGCCACCAGTGATTACAGAT
 MournGekko
 CCAAACCAGCCCATGTACCCTGTGCATCCAGTGCAGCCACTGCCACCAGTGATACATGAT
 Gekko_japon
 CCAAACCAGCCCATGTACCCTGTGCATCCAGTGCAGCCACTGCCACCAGTGATACATGAT
 Aspidoscelis ---
 GGAAACACCAACCAGCCAATATACCAAGCACAGCCACAGCTTCCAGTGATTTCGAGAT

 Allig_sinensis
 ATGCCACTAGAACCATGGCGGCCAATGGACAAGACCAAGCAAGAGGAAATAGAT-----
 Allig_mississip
 ATGCCACTAGAACCATGGCGGCCAATGGACAAGACCAAGCAAGAGGAAATAGAT-----
 Crocodilus_poro
 ATGCCACTAGAACCATGGCGGCCAATGGACAAGACCAAGCAAGAGGAAATAGAT-----
 Gharial
 ATGCCACTAGAACCATGGCGGCCAATGGACAAGACCAAGCAAGAGGAAATAGAT-----

Paleosuchus
ATGCCACTAGAACCATGGCGGCCAATGGACAAGACCAAGCAAGAGGAAATAGAT-----
M.musculus
CTGCCTCTGGAAGCTTGGCCAGCGACAGACAAGACCAAGCGGGAAGAAGTGGCGTTTTCT
Rattus
CTGCCTCTGGAAGCTTGGCCAGCGACAGACAAGACCAAGCGGGAAGAAGTGGCATTTTCT
Sus
CTGCCTCTGGAAGCTTGGCCAGCAACAGACAAGACCAAGCGGGAGGAAGTGGAT-----
Bos
CTGCCTCTGGAAGCTTGGCCAGCAACAGACAAGACCAAGCGGGAGGAAGTGGAT-----
Human
CTGACTCTGGAAGCTTGGCCATCAACAGACAAGACCAAGCGGGAGGAAGTGGAT-----
Equus
CTGCCTCTGGAAGCTTGGCCAGCAACAGACAAGACCAAGCGGGAGGAAGTGGAT-----
Ursus
CTGCCTCTAGAAGCTTGGCCAGCAACAGACAAGACCAAGCGGGAGGAAGTGGTGAGTATC
Tursiops
CTGCCTCTGGAGGCTTGGCCCGCAACAGACAAGACCAAGCGGGAGGAAGTGGTGAGTACA
Ornithorhynchus
TTGCCCTTGAGCAGTGGCCGCAACTGACAAGACCAAGCGAGAGGAAGTGGTGAGCGGT
Cavia
TTGCCTCTGGAAGCTTGGCCAGCAACAGACAAGACCAAGCGGGAAGAAGTGGAT-----
Monodelphis -----
ATGGAAGCTTGGCCAGCCACTGACAAGACCAAGAGGGAGGAAGTGGAC-----
Anolis
ACACCTCTTGAATCATGGCCACCAGCTGACAAGACCAAGCAAGAAGAAGTGGAC-----
Ophisaurus
ACACCTCTTGAATCATGGCCACCAGCTGACAAGACCAAGCAAGAGGAAGTGGAT-----
Shinisaurus
ACACCTCTTGAATCATGGCCACCAGCTGACAAGACCAAGCAAGAGGAAGTGCATGAC---
Boa_constrictor ACTCCTCTTGAATCATGGCCA---
GCTGACAAGACCAAGCAAGAAGAAGTGGAT-----
Thamnophis ACACCTCTTGAATCATGGCCA---
GCTGATAACACCAAGAAAGAAGAAGTGGAT-----
Crotalus_horrid ACACCTCTTGAATCATGGCCA---
GCTGATAAGACCAAGCAAGAAGAAGTGGAT-----
Crotalus_mitche ACACCTCTTGAATCATGGCCA---
GCTGATAAGACCAAGCAAGAAGAAGTGGAT-----
Protobothrops ACACCTCTTGAATCATGGCCA---
GCTGATAAGACCAAGCAAGAAGAAGTGNNNNNN---
Vipera ACACCTCTTGAATCATGGCCA---
GCTGATAAGACCAAGCAAGAAGAAGTGNNNNNN---
Python_mulurus ACGCCTCTTGAATCATGGCCA---
GCTGACAAAACCAAGCAAGAAGAAGTGNNNNNN---
Cobra ACACCTCTTGAATCATGGCCA---
GCTGACAAGACCAAGAAAGAAGAAGTGGAT-----
Pantherophis ACACCTCTTGAATCATGGCCA---

GCTGACAAAACCAAGAAAGAAGAAGTGGAT-----
Ctenosaurs
ACACCTCTTGAATCGTGGCCAGCAGCAGACAAGACCAAGCAGGAAGAAGTGGACNNN---
Pogona
ACACCTCTTGAATCATGGCCAGTACCCGATAAGACCAAGCAAGAAGAAGTGGATNNN---
Eublepharis GCTCCT---
GAACCATGGCCAGGAACAGACAAGACCAAGCAAGAGGAAGTGAAG-----
MournGekko
GCTCCTCTTGAACCATGGCCAGGAACAGATAAGACCAAGCAAGAAGAAGTGTATGAG---
Gekko_japon
GCTCCTCTTGAACCATGGCCAGGAACAGATAAGACCAAGCAAGAAGAAGTGTATGAG---
Aspidoscelis ACACCTCTTGAA---
TGGCCAGCACCTGACAAGACCAAGCAAGAAGAAGTGNNNNNN---

Allig_sinensis

Allig_mississip

Crocodilus_poro

Gharial

Paleosuchus

M.musculus CCTATGAAG-----
TGGTACCAGGGCATGACAAGGCATCCGCTTAACATGGAAAGCACA
Rattus CCTATGAAG-----
TGGTACCAGGGCACGGCAAGGCATCCGCTTAACATGGAAACCACA
Sus

Bos

Human

Equus

Ursus

CCT-----

Tursiops

CCC-----

Ornithorhynchus

CCCTTTTCTCGCTCCTGG-----

Cavia

Monodelphis

Anolis

Ophisaurus

Shinisaurus

Boa_constrictor

Thamnophis

Crotalus_horrid

Crotalus_mitche

Protobothrops

Vipera

Python_mulurus

Cobra

Pantherophis

Ctenosaurs

Pogona

Eublepharis

MournGekko

Gekko_japon

Aspidoscelis

Allig_sinensis -----
Allig_mississip -----
Crocodilus_poro -----
Gharial -----
Paleosuchus -----
M.musculus ACAGAAAAA
Rattus ACAGAAAAA
Sus -----
Bos -----
Human -----
Equus -----

```

Ursus -----
Tursiops -----
Ornithorhynchus -----
Cavia -----
Monodelphis -----
Anolis -----
Ophisaurus -----
Shinisaurus -----
Boa_constrictor -----
Thamnophis -----
Crotalus_horrid -----
Crotalus_mitche -----
Protobothrops -----
Vipera -----
Python_mulurus -----
Cobra -----
Pantherophis -----
Ctenosaurs -----
Pogona -----
Eublepharis -----
MournGekko -----
Gekko_japon -----
Aspidoscelis -----

```

Mammals+Reptiles-ENAM-AA-ALN.txt

CLUSTAL format alignment by MAFFT (v7.370)

```

Ornithorhynchus
MGRGTEANGGTETQRFQVQTPQGTSGMGEIRGQILKLKEATINHCQILKKKTLWIRSRKD
Monodelphis
M-----LLHQGNH-
Mus_musculus
M-----LLLQCRN-
Rattus
M-----LLLQCRN-
Cavia
M-----RLLHCRK-
Homo
M-----LVLRCRL-
Equus
M-----LLLPCRH-
Ursus
M-----LLLQYRH-
Bos

```


-----MLLQCRH-
Sus
-----MLLSCRH-
Tursiops
M-----LLLHCRH-
Allig_mississip

Allig_sinensis

Gharial

Crocodilus_nilo

Crocodilus_poro

Aspidoscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MournGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

CKWSFHFFQKWVQVLLGLGNRPSGLMVNLGKARVASSATGTGSPTAPLPWHRIYAFDFGS

Monodelphis -----

RTFSPE-----

Mus_musculus -----

PTSPPK-----

Rattus -----

TASPPK-----

Cavia -----

GASFPK-----

Homo -----

GTSFPK-----

Equus -----

GTSFPK-----

Ursus -----

GASLPK-----

Bos -----

EASSPK-----

Sus -----

GASSPK-----

Tursiops -----

EASSPK-----

Allig_mississip

Allig_sinensis

Gharial

Crocodilus_nilo

Crocodilus_poro

Aspidoscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MournGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

YILLELTRYWQAVHQEFKFSGEDKHLNTVQIREANEYKDVIYICAEGVGIARGKMKSFLLF

Monodelphis

--LVDV-----

VPRGKMKTLLMF

Mus_musculus

--PCGL-----

VPNVKMS-LLVF

Rattus

--

PCDM-----

-----VKMS-LLVF

Cavia

--LYNL-----

VPNGKMKMLLVF

Homo

--LDNL-----

VPKGKMKILLVF

Equus

--LDDL-----

VPSGKMKILLVF

Ursus

--LDNL-----

VPSGKMKILLVF

Bos

--LDYL-----

VPSGKMKILLVF

Sus

--LDNL-----

VPSGKMKILLVF

Tursiops

--LDNL-----

VPSGKMKSVLVF

Allig_mississip	-----MFLQF
Allig_sinensis	-----MFLQF
Gharial	-----MFLQF
Crocodylus_nilo	-----MFLQF
Crocodylus_poro	-----MFLQF
Aspidoscelis	-----MKLILLY
Shinisaurus	-----XXXXXXX
Ophisaurus	-----MKLILLF
Anolis	-----MKQLLLY
Eublepharis	-----MKIIVLC
MournGekko	-----MKIILMY
Gekko_japon	-----MKIILMY
Python	-----MKLILLY
Boa_constrictor	-----MKLILLY
Vipera	-----MKLILLY
Protobothrops	-----MKLILLY
Crot_horrid	-----MKLILLY
Crot_mitch	-----MKLILLY
Thamnophis	-----MKLILLY
Cobra	-----MKLILLY
Pantherophis	-----MKLILLY
Pogona	-----MKLFVLY
Ornithorhynchus	LGLFGASTAMP--MHMPRMPGFGSKSEEMMPY-GQYNFMNSPHMAQL-

GPL--YGYGL--
 Monodelphis LSLFSCSIAMP--MQMPRMGGFGSKSEEMMRY-GQYSFMNMPHMAHL-
 GPL--YGYNI--
 Mus_musculus LGLLGVSAAMPFQMPMPRMPGFSSKSEEMMRY-NQFNFMNAPPMPM-
 GP---YGNMMPM
 Rattus LGLLGVSAAMP--MPMPRMPGFSSKSEEMMRY-NQFNFMNAPPMMHM-
 GP---WQNGLPM
 Cavia LGLLGNSAAMP--MYMPRMPGFSSKSEEMMRY-GQFNFMHPPPMAPM-
 GPMGPYNGY--
 Homo LGLLGNSVAMP--MHMPRMPGFSSKSEEMMRY-NQFNFMNGPHMAHL-
 GPF--FGNGL--
 Equus LGLLGNSVAMP--LQMPRIPIGFSSKSEEMMRY-GQFNFMNSPHMAQL-
 GPM--YGNM--
 Ursus LGLLGNSVAMP--MQMPRMPGFSSKSEEMMRY-GQFNFMNSPHMAQL-
 GPL--YGNM--
 Bos LSLLGYSIAMPLQMHMPRIPIGFSSKSEEMMRY-GHFNFMNPHLAHL-
 SPF--YNGI--
 Sus LGLLCYSAAMP--MQMPRMPGFSSKSEEMMRY-GHFNFMNAPHMAHL-
 GTL--YGNM--
 Tursiops LGLLCYSIAMP--MQMPRMPGFSSKSEEQMRY-GHFNFMNSPQMVHL-
 GPL--YGNM--
 Allig_mississip LCLFGMSIAVP--MRLPRKAGFGSKSEEMMQY-GQYAYMNSPAM----
 NPF--YGYGS--
 Allig_sinensis LCLFGMSIAVP--MRLPRKAGFGSKSEEMMQY-GQYAYMNSPAM----
 NPF--YGYGS--
 Gharial LCLFGMSIAVP--MRLPRKAGFGSKSEEMMQY-GQYAYMNSPAM----
 NPF--YGYGS--
 Crocodilus_nilo LCLFGMSIAVP--MRLPRKAGFGSKSEEMMQY-GQYAYMNSPAM----
 NPF--YGYGS--
 Crocodilus_poro LCLFGMSIAVP--MRLPRKAGFGSKSEEMMQY-GQYAYMNSPAM----
 NPF--YGYGS--
 Aspidoscelis ACLMGSSCAAL--
 LRKPRQAGFGSKSEEMMQFGGPFYLNPHLAHLAASL--YGFERS--
 Shinisaurus XXXXXXXXXXXX--LRKPRKAGFGSKSEEMMQF-GPYGYINSPQLA---
 ASL--YGYRA--
 Ophisaurus LCLVGTSCAVP--LRKPRKAGFGSKSEEMMQF-
 GPYSYMNSPQLAQLAASL--YGYRA--
 Anolis LCLIGTSWAVR--LRKPRKAGFGSKSEEMMQY-
 GPFYLNSPQLTQLAASL--YGYRS--
 Eublepharis LCLVSITCAIP--LRKPRKAGFGSKSEEMMQF-
 GPYSYMNSPQLAPL---L--YGYRP--
 MournGekko LCLVGTSCAIL--LRKPRRAGFGSKSEEMMQF-
 GPYAYMNSPQLSPF---L--YGYRP--
 Gekko_japon LCLVGTSCAIL--LRKPRRAGFGSKSEEMMQF-
 GPYAYMNSPQLSPF---L--YGYRP--
 Python LCLVGISYAGP--LRKPRRAGYGSKSEEMTQF-GPYGYIQSPQVT---
 GPF--YGYHS--

Boa_constrictor LCLVGISYAGP--LRKPRKAGYGSESEEMMQF-SPYGYIHSPQVA---
 GSF--YGYHS--
 Vipera LCLVGISYAGP--LRKPRRAGYGSKSEEMMQF-GPYGYINSPQVA---
 GSF--YG-----
 Protobothrops LCLVGISYAGP--LRKPRRAGYGSKSEEMMQF-GPYGYINSPQVA---
 GSF--YGYPS--
 Croc_horrid LCLVGISYAGP--LRKPRRAGYGSKSEEMMQF-GPYGYINSPQVA---
 GSF--YGYPS--
 Croc_mitch LCLVGISYAGP--LRKPRRAGYGSKSEEMMQF-GPYGYINSPQVA---
 GSF--YGYPS--
 Thamnophis LCLVGMSYAGP--LRKPRRAGYGSKSEEMMQF-GPYGNINLPQIA---
 GSF--YGYHS--
 Cobra LCLVGISYASP--LRKPRRAGYGSKSEEMMQF-GPYGYINSPQIA---
 GSF--YGYHS--
 Pantherophis LCLVGMSYAGP--LRKPRKAGYGSKSEEMMQF-GPYGYINSPQIA---
 GSF--YGYHS--
 Pogona LCLVGTSCAIP--LRKRRKAGFGSKSEEMMPF-
 GAYGFLNSPQLSOLAASL--YGYRP--

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* : :

Ornithorhynchus --QL-PQFFQPPQM-PPWPQPPPNGWPA-QNPGPPQGGKPQ-
 AKPGQSQ----NTKQPNP
 Monodelphis --RL-PQQFPQIQM-PVWPQPPNAWLP-RIPC-HRTYQDH-
 RKAGEGQ----EIPRPSQ
 Mus_musculus PPHM-PPQYPPYQM-PMWPPVPNGW---QQ---PPMPNFP-
 SKTDQTQ----ETAKPNQ
 Rattus PPHM-PPQYPPYQM-PMWPPVPNGW---QQ---PPMPNFP-
 SKTEQTQ----ETAKPNQ
 Cavia --QI-PPYPQYPMPPMWPPLPSGW---QN---PPVPQHQ-
 TKTDQNO----ETQKPNQ
 Homo -----PQQFPQYQM-PMWPQPPNTWHP-RK---SSAPKRH-
 NKTDQTQ----ETQKPNQ
 Equus --QLPPQLFPQYQM-PMWPQPPAIMGRP-KKSS-PSTQKQPQ-
 SKTDQAP----ETPMPNQ
 Ursus -----PPVFPQYQM-PMWPQPPNMGHL-
 QKSSPPSAPKRQKSKTDQIP----ETQNPNE
 Bos --QL-PQLFPQYQM-PMWPQPPNKKSP-QK---PSSPAAP-
 KQTDQAP----ETPSPNQ
 Sus --QL-PQFFPQYQM-PMWPQPPNKKHP-QK---PSASKQQ-
 SKTDPAP----ESQKPNQ
 Tursiops --QL-PQLFLPYQM-PMWPQPPNKKRP-QKPSSPSAPKHQ-
 SKTDQAP----ETQKPNQ
 Allig_mississip --SY-PQIFQQQ---PVWPQQQLYLWQQ-QKPVQPPAIQPQ-
 QKPRQAQ----RSPQPSR
 Allig_sinensis --SY-PQVFQQQ---PVWPQQQLYLWQQ-QKPVQPPAIQPQ-
 QKPRQAQ----RSPQPSR

Gharial --SY-PQVFQQQ---PVWPOQQLYLWQQ-QKPVQPPAIQPQ-
 QKPRQAQ----RSPQPSK
 Crocodilus_nilo --SY-PQVFQQQ---PVWPOQQLYLWQQ-QKPVQPPAIQPQ-
 QKPRQAQ----RSPQPSR
 Crocodilus_poro --SY-PQVFQQQ---PVWP-QQLYLWQQ-QKPVQPPAIQPQ-
 QKPRQAQ----RSPQPSR
 Aspidoscelis --RQ-PPLFPQ-----LPQRQFLMWQQ-QTPGHQAARLPE-
 RKLHKAP----GVKHPNM
 Shinisaurus --SY-PQMFSQQ---PISPLQRFFLWQP-QTPVHQAARLPQ-
 QKPHQTP----VAKQPNQ
 Ophisaurus --GY-PQMFPQQ---PGSPLQGFYLWQP-QTPVHQAARLPQ-
 LKPHQTP----VAEQPKS
 Anolis --GF-PQMVPQQ---PTFPLQRFFYLWQP-QMPVHQSARPPQ-
 QKAHQTP----VPKKPNS
 Eublepharis --SY-PQLFPQ-----PRQRFYIWPQ-QTPAHQAARLPQ-
 RKPHQTP----AARQPIQ
 MournGekko --SY-PQLFPQ-----PLQRFFYLWQP-QTPVHQAARLPQ-
 RKPHQTL----GARQPIH
 Gekko_japon --SY-PQLFPQ-----PLQRFFYLWQP-QTPVHQAARLPQ-
 RKPHQTL----GARQPIH
 Python --SY-PQIFPKW---PILPLQRFFIWPQPAPPSHQAARKLPQ-
 KKPQQTP----GTKQSNQ
 Boa_constrictor --SY-PQMFSQW---PILPLQRFFPWPQPASPTHQAARLPQ-
 QKPPQTP----GIKQPNQ
 Vipera ---Y-PQMFSQW---PILPLQRFFLWQPQATPAHQASRLPQ-
 QKPQQIP----GTKQPNQ
 Protobothrops --GY-PQMFSQW---PTLPLQRFFLWPPSATPAHQASRLPQ-
 QKPQQIP----RTKQPNQ
 Croc_horrid --GY-PQMFSQW---PILPLQRFFLWQPQSTTPAHQASRLPQ-
 QKPQQIP----GTKQPNQ
 Croc_mitch --GY-PQMFSQW---PILPLQRFFLWQPQSTTPAHQASRLPQ-
 QKPQQIP----GTKQPNQ
 Thamnophis --NY-PQMLPQW---PVLPLQRFFLWQPQASPVHQASRLPQ-
 QKLQQIP----GTKQPNQ
 Cobra --N--PQMFSQW---PILPLQRFFLWQPQASPTHQASRLPQ-
 QKPQQIP----RTKQPNQ
 Pantherophis --NY-PQMFPQW---PVLPLQRFFLWQPQASPVHQASRLPQ-
 QKPQQIP----ETKKPNQ
 Pogona --SY-LQLFPQQ---SMPPLSRPSLWQQ-QMPAHEATRFPS-
 QNPHRLPQQPSAARRPNS

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Ornithorhynchus -----SQ-----P-KKPPQ--QQ-
 PPKQAAKQPAPGPS-----
 Monodelphis -----PL-----P-TKPPT--T---
 PKPPTKQSPEGPP-----

Mus_musculus -----TN-----P-QEP-----Q-
PQKQPLKEPPNEAA-----
Rattus -----TD-----P-QEP-----Q-
PQKQPLKEPPNEAA-----
Cavia -----TQ-----P-QKP-----
PEKQPSNQPPENPP-----
Homo -----TQ-----S-KKP-----
PQKRPLKQPSHNQP-----
Equus -----TQ-----P-KKS-----PPKQPAQ-----
T-----
Ursus -----PQ-----P-KKP-----
PPKQPLKQPPPTPA-----
Bos -----PQ-----P-TDS-----
PPNQHLKQPSTTTA-----
Sus -----PQ-----P-KTP-----
TPKQPLNEPSPTPT-----
Tursiops -----PQ-----L-KQP-----
LPEHPLKQPSPTPT-----
Allig_mississip -----PQPQPQPRPQPRLQPSQ--QP--AKPKPQKPQKQPP-
PTQPAHPSHSQPPAQ
Allig_sinensis -----PQPQPQPRPQPRPQPSQ--QP--AKPKPQKPQKQPP-
PTQPAHPSHPQPPAQ
Gharial -----PQPQPQPRPQPOLQPSQ--QP--AKPKPQKPQKPPP-
PTQPAHPSRPQPPAQ
Crocodilus_nilo -----PQPQPQPRPQPPQPSQ--QP--AKPKPQKPQKPPP-
PTQPAHPSRPQPPAQ
Crocodilus_poro -----PQPQPQPRPQPPQPSQ--QP--AKPKPQKPQKLPP-
PTQPAHPSRPQPPAQ
Aspidoscelis -----RSQPKQLP--P--QPRR--QQ--PQPMPQLPKLPQ-
NTNPSQ-T-QQVPVQ
Shinisaurus -----RPQPRPQLL--P-QQPRY--QQ--PQPKMQPPKQPQ-
NIRPTQ-TRQQVPIQ
Ophisaurus -----RPQARPQLP--P-QQPRY--QQ--PQAKIQQPSKPPQ-
NTRPTQ-THQQVPVQ
Anolis -----RPRLKPRLV--P-QQPRY--QQ--
PQPKIHLPAKQPPVATHPFQ-PQPQTPVQ
Eublepharis -----RPKLQPQMPQQP-HKPIQ--QQ--PHPKIQQPPKPP-
STSSPQ-IHHQGPVY
MournGekko RPQLPQLRPQLRPQMPQQP-HKPIQ--QQ--PRPRIQLPPKPP-
NTSPPQ-TPHQVPVH
Gekko_japon RPQLPQLRPQLRPQMPQQP-HKPIQ--QQ--PRPRIQLPPKPP-
NTSPPQ-TPHQVPVH
Python -----RPQ----LP--P-RQPRP--QQPPPPQ----PKQPQ-
KTNPSH-THPQVPMQ
Boa_constrictor -----RPQ----LP--P-QQPRY--QQ--PQ-----PKQPQ-
KTNPSQ-IYPQVPIQ
Vipera -----RPQ----LP--P-QQPRY--QQ--PQPL----PKQPQ-

KTKPSQ-TYPQVPFX
 Protobothrops -----RPQ----LP--P-QQPRY--QQ--PQPL----PKQPQ-
 KTNPSQ-TYPQVPFQ
 Croc_horrid -----RPQ----LP--P-QQPRY--QQ--PQPL----PKQPQ-
 KTNPSQ-TYPQVPFQ
 Croc_mitch -----RPQ----LP--P-QQPRY--QQ--PQPL----PKQPQ-
 KTNPSQ-TYPQVPFQ
 Thamnophis -----RPQ----LP--P-QQPRY--QQ--PQPL----PKQPQ-
 KTNPSQ-TYPQVPFQ
 Cobra -----RPQ----LP--PQQPRY--QQ--PQPL----PKLPQ-
 KTNPSQ-TYPQVPFQ
 Pantherophis -----RPQ----LP--P-QQPRY--QQ--PQPL----PKQPQ-
 KTNPSQ-TYPQVPFQ
 Pogona -----RPQPKQLP--P-QQPTHQVQQ--
 PQIKVQQPPKLPSSAADPSQ-PQPQLP--

Ornithorhynchus KPT-EE-----TRQPQMYPPFGNGFFP-----
 FQLQPWQIPP-----
 Monodelphis RPK-EE-----DQPPQYPPFGNGMFP-----FHQPPWHIPQF--
 YNPGGFPSPPNNP
 Mus_musculus RAK-DD-----AQPPQFPPFGNGLYP-----
 YQPPWPIPIQ-----
 Rattus RAK-DE-----AQPPQFPPFGNGLYP-----
 YQPPWPIPIQ-----
 Cavia KDK-AD-----AQPPQFPPFNGLFP-----
 FQPPWPIPIQ-----
 Homo QPE-EE-----AQPPQAFPPFGNGLFP-----
 YQPPWQIPQ-----
 Equus QAE-EE-----AQPPQAFPPFGNGLFP-----
 YHQPWQVPH-----
 Ursus QPE-EE-----
 TQPPQAFPPFGNGLFPFNSGLYQPPWQVPH-----
 Bos QPQEEE-----TQTPQAFPPFGNGLFP-----
 YQPPWHIPH-----
 Sus QPE-EE-----TQTPQAFPPFGNGLFP-----
 YQPLWHVPH-----
 Tursiops QPQ-EE-----TQTPQAFPPFGNGLFP-----
 YQPLWHVPQ-----
 Allig_mississip PRNEEK-----QLSPQVYFPYSNAHFP-----YQQPWHIPQI--
 YNQGFLPQ-LNP
 Allig_sinensis PRNEEK-----QLSPQKCIPYSNAHFP-----YQQPWHIPQI--
 YNQGFLPQ-LNP
 Gharial PRNEEK-----QLSPQVYFPYSNAHFP-----YQQPWHIPQI--
 YNQGFLPQ-LNP
 Crocodilus_nilo PRNEEK-----QLSPQVYFPYSNAHFP-----YQQPWHIPQI--
 YNQGFLPQ-LNP

Crocodilus_poro PRNEEK-----QLSPQVYFPYSNAHFP-----YQQQPWHIPQI--
 YNQGGLFPQ-LNP
 Aspidoscelis QPKARKEQQQQQQQQPQVLPP-----YLQQPWHFPQI--
 FRQGAQP--FGP
 Shinisaurus QPKWGN-----QQQPQALPP-----HLQQPWHFPPI--
 FGHGGFQPQPFPRP
 Ophisaurus QPKRGN-----QPPQAFPP-----HPQQPWHFPQM--
 FGHGGFQPQSFQP
 Anolis PPKGEK-----PQQPQAFPP-----HPQQPWQFPQI--
 FGHGGFQPQLFNP
 Eublepharis QSKRVQ-----PQQPQILFP-----RQQYPWHFSQI--
 FNQGGFHPQSFQP
 MournGekko QSKGVK-----QQQPQILFP-----NQOHLWHFPQI--
 LSQGGFHPQPFSP
 Gekko_japon QSKGVK-----QQQPQILFP-----NQOHLWHFPQI--
 LSQGGFHPQPFSP
 Python HPTEGK-----QOHPQAFAP-----YPQQPWHFPQI--
 FGAGGFQPQQFGP
 Boa_constrictor HPKEGK-----QQQPQAFPP-----YPQQPWHFLQI--
 FGPGCFQPQPFQP
 Vipera XXXXXX-----XXXXXGFPP-----
 YSQPPWHFPQFPYIVSRGFHPRHL-S
 Protobothrops HPKEGK-----QQQPQGFPP-----YPQPPWHFPQL--
 FGPRGFQPKHFGS
 Croc_horrid HPKEGK-----HQQPQGFPP-----YLQPPWHFPQL--
 FGSRGFQPKHFES
 Croc_mitch HPKEGK-----QQQPQGFPP-----YPQPPWNFPQL--
 FGSRGFQPKHFGS
 Thamnophis YPTEGK-----QQQPQGFPP-----YSQPPWHFPQL--
 FGSRGFQPKRSQG
 Cobra HPKEGK--QQLQQQQPQGFPP-----YSQPPWHFPQI--
 FGPRGFQPKHYGS
 Pantherophis HPKEGK-----QQQPQGFPP-----YSQPPWHFPQI--
 FGPRGFQPQQYGS
 Pogona -----DLQSKAFLP-----HQQQPWHFPQVM-
 FGHGGFQPQMFGP

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Ornithorhynchus ---QM-PP--
 GYGRPPGSNEEGGNPYFGYFGHQFGGRPPYYSEEMKEE-----EKES
 Monodelphis FHGRM-PP--
 GYGRPPVSNEEGGNPYFGYFGYHGFGRPPYYSEEMFEQDFEKPK-EEDP
 Mus_musculus ---RG-PP-TAFGRPKFSNEE-GNPYYAFFGYHGFGR-
 PYYSEEMFE-DYEKPK-EKDP
 Rattus ---TG-PP-TGFGRPKFSNEE-GNPYYAYFGYHGFGR-
 PYYSEEMFE-DYEKPK-EKDP
 Cavia ---RMPPP--GYGRPPLSNEDGGNPYFGFFGYPGFGGR-

PYYSEEMFE-DYEKPK-EEDP
 Homo ---RLPPP--
 GYGRPPISNEEGGNPYFGYFGYHGFGRPPYYSEEMFEQDFEKPK-EEDP
 Equus ---RL-PP--
 GYGRPLGSNEEGGNPYFGYFGYHGFGRPPYYSEEMFE-DFEKPK-EEDP
 Ursus ---RV-PP--
 GYGRPPGSNEEGGNPYFGYFGYQGFGRPPYYSEEMFEQDFEKPK-EEDP
 Bos ---KI-PP--
 GFGRPPGSNEEGGNPFFGFFGYHGFGRPPYYSEEMFE-DFEKPK-EEDP
 Sus ---RI-PP--
 GYGRPPTSNEEGGNPYFGFFGYHGFGRPPYYSEEMFEQDFEKPK-EKDP
 Tursiops -----PP--
 GYGRPPVSNEEGGNPYFGYFGYHGFGRPPYYSEEMFEQDFEKPK-EKDP
 Allig_mississip QHRQM-PP--GFGQPPISNEEGGNPYGY-
 FFQGLGQRPPYYSEEMFEHEYDKPKPEKEA
 Allig_sinensis QHRQM-PP--GFGQPPISNEEGGNPYGY-
 FFQGLGQRPPYYSEEMFEHEYDKPKPEKEA
 Gharial QHRQM-PP--GFGQPPISNEEGGNPYGY-
 FFQGLGQRPPYYSEEMFEHEYDKPKPEKEA
 Crocodilus_nilo QHRQM-PP--GFGQPPISNEEGGNPYGY-
 FFQGLGQRPPYYSEEMFEHEYDKPKPEKEA
 Crocodilus_poro QHRQM-PP--GFGQPPISNEEGGNPYGY-
 FFQGLGQRPPYYSEEMFEHEYDKPKPEKEA
 Aspidoscelis YQGHM-P----LGRPPVSNEE-GTPYFGY-
 GFHGLGGRPPYYSEEMFEQDFEKPK-EKDP
 Shinisaurus YQGHV-P----FGRPPVSTEE-GTPHYGY-
 GFQGMGGRPPYYSEEMFEQDFEAK-EKEA
 Ophisaurus YQGRM-P----FGRPPAS-EE-GTPYFGY-GYQG---
 RPPYYSEEMYEQDFEKPK-EKEP
 Anolis YQGHM-P----FGRPPNS-EE-GNPYFGP-
 GYQGMGGRPPYYSEEMFEQE-----DKEA
 Eublepharis FQGSN-PP--GFGHPPISNEE-GTPYYGY-GYHGLGNRRPYNSEE-
 FENDYEKPK-EKEA
 MournGekko FHGRM-PA--GFGRPPISNEE-GTPYYGY-GYPGLGVR-PYNSEE-
 FEQDYEKPK-EKEA
 Gekko_japon FHGRM-PA--GFGRPPISNEE-GTPYYGY-GYPGLGVR-PYNSEE-
 FEQDYEKPK-EKEA
 Python YQRHM-P----FGRPPISNEE-GTPYFGY-
 GYHGLGNRLPYSEEMFEQDFEKPK-EKDS
 Boa_constrictor YQGHM-P----FGRPPVSNEE-GTPYFGY-
 GYHGLGNRPPYYSEEMFEQDFEKPK-EKDP
 Vipera AMGHM-P----FGQPPVSNEE-GTPYFGY-
 GYHGLGNRPPYYSEEMFEQDFEKPK-EKEP
 Protobothrops YQGHM-P----FGQPPVSNEE-GTPYFGY-
 GYHGLGNRPPYYSEEMYEQDFEKPK-EKEP
 Crot_horrid YQGHM-P----FGQPPVSNEE-GTPYFGY-
 GYHGLGNRPPYYSEEMYEQDFEKPK-EKEP

Crot_mitch YQGHI-P----FGQPPVSNEE-GTPYFGY-
 GYHGLGNRPPYYSEEMFEQDFEKP-K-EKEP
 Thamnophis YCHHM-P----FGQPPVSNEE-GTPYFGY-
 GYHGLGNRSPYYSEEMFEQDFEKP-K-EKEP
 Cobra YQGHI-P----FGQPPVSNEE-GTPYFGY-
 GYHGLGNRPPYYSEEMFEQDFEKP-K-EKEP
 Pantherophis YQGHM-P----FGQPPVSNEE-GTPYFGY-
 GYHGLGNRPPYYSEEMFEQDFEKP-K-EKEP
 Pogona YQGR-PLGRPLGRPHVSNEE-GAPYFGY-GYHGMGHRPP-
 YSEEMFEQDFEPPV-EKEP

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Ornithorhynchus PKED-----
 SPSPEPTANSTVAETNSTQPSGSPSQAQSGGNATDPGQS-AGNGSPAQTPG
 Monodelphis PKVE-----
 STTAAPPTNSTVPETNSTQATVPVSGGSQGGNETST----TGNEAEVQNP
 Mus_musculus PKPEDPPPDDPPPEASTNSTVDPANATQSI---P---
 EGGNDTSP----IGNTGPGPNAG
 Rattus PKPEDPPPDDPPPEASTNSTVDPANATQSI---
 PGGGQGGNDSSP----VGNTGPGPNAG
 Cavia PKPE-----DPPSEPSANSTVPETNSTQLT-----
 NQGKNDTGP----TLNSIPGLNTG
 Homo PKAE-----SPGTEPTANSTVTEETNSTQ---
 PNPKGSQGGNDTSP----TGNSTPGLNTG
 Equus PKAE-----
 SPATEPSSNSTVPENNSTQPNAPNPRGSQGGNDTSP----TGNSGYGPNTV
 Ursus PKKE-----
 SPAAEPSGNSTGPETNSTQSNAPIPGGSQGGNDTSP----TG-----PNM-
 Bos PKTE-----
 TPATDPSVNSTVPETNSTQPGAPSPRAGQGGNDTSP----AGNNGQDPNTV
 Sus PKTE-----TPATEPSVNTTVPETNSTQPNAPNPR----
 GNDTSP----TGTSGQGNPR
 Tursiops PKTE-----
 SPATDPSVNSTVPETNSTQSNAPNPRGSQGGNDTSP----TGNSVQGSNTV
 Allig_mississip PKEE-----
 SPAAAPVPNATVPVVSTTTTPSPPSQGGDQGGNATHPGVSAGENGTPSQNPE
 Allig_sinensis PKEE-----
 SPAAAPVPNATVPVVSTTTTPSPPSQGGDQGGNATHPGVSAGGNGTPSQNPE
 Gharial PKEE-----
 SPAAAPVPNATVPVVSTTTTPSPPSQGGDQGGNATHPGVSAAGSGTPSQNSE
 Crocodilus_nilo PKEE-----
 SPAAAPVPNATVPVVSTTTTPSPPSQGGDRGGNATHPGVSAGGSGTPSQNPE
 Crocodilus_poro PKEE-----
 SPAAAPVPNATVPVVSTTTTPSPPSQGGDRGGNATHPGVSAGGSGTPSQNPE
 Aspidoscelis -----PAPDPATNSTVSDTNSTLSNPP----
 SQGENATLSGLSTS--GANSPVLE

Shinisaurus PK-----ATDPATNSTVSDTNSTISNPA----
 NQGGNATISGLSSTSNGANSPDLQ
 Ophisaurus PK-----TTDPPTNSTVSDTNSTISNPA----
 SQGGNATISGLSTMNNGANSPGLQ
 Anolis PK-E-----SPATDPVTNST--DTNSTVSNPA----
 SQGGNGTMSGLSEKATGANSPGLQ
 Eublepharis PKTE-----SPATDPATNAT--DTNSTLSNPA----
 QVGNATNAGLSITDNGGNSPKLE
 MournGekko PNTE-----SPAADPATNAT--DTNSTLSNPS----
 SQAGNATNSGLSVTDSGANSPNLE
 Gekko_japon PNTE-----SPAADPATNAT--DTNSTLSNPS----
 SQAGNATNSGLSVTDSGANSPNLE
 Python PK-E-----NPAADPITNSTVSDTNSTI--PA----
 SHGGNATLSGLSPTNNEANFLGVP
 Boa_constrictor PK-E-----NPAADPTMNSTVSDTNSTI--PA----
 SHGGNATLSGLSTTNNEANFLGVP
 Vipera PK-E-----NPASDPTTNSTVSDTNSTI--PA----
 SHGGNASLSGLSTTNNEANF----
 Protobothrops PK-E-----NPASDPTTNSTASDTNSTI--PA----
 SHGGNANLSGLSTTNNEANF----
 Croc_horrid PK-E-----NPASDPTTNSTASDTNSTI--PA----
 SHGGNANLSGLSTTNNEANF----
 Croc_mitch PK-E-----NPASDPTTNSTASDTNSTI--PA----
 SHGGNANLSGLSTTNNEANF----
 Thamnophis AK-E-----NPASDPTTNSTVSDTNSTI--PA----
 SHGGNATFSGLSSTTNNEVNFPGLS
 Cobra PK-E-----KPADPPTTNSTVSDTNSTI--PA----
 SHRENATLSGISTTNNEANFPGLS
 Pantherophis PK-E-----NPASDPTTNSTVSDTNSTI--AA----
 SNGGNATLSGLSTTNNEANFPGLS
 Pogona AK-E-----TPATNPVTNSTVADTNTTVSNPA----
 SQGGNATISEPIATGNGANPLGLQ

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Ornithorhynchus HGTVPDNGE-PPGPLLNASDHGGARGPKPTGPGPGQPPFRGRPANPN-
 AAPGFPAQRQR
 Monodelphis -----I-NLAPAVNVSGQDGPGS--
 QVPPGPYQPTILENSPNPN--LRGFPI SRQW-
 Mus_musculus NNPTVQNGV-FPPPKNVSGQGVPKS--
 QIPWRPSQPNIYENYPYPN-----YP SERQW-
 Rattus NNPTVLNGV-FPLPKVNVSGQGVPKN--
 QIPWRPSQPNIYENYPYPN-----YP SERQW-
 Cavia NNPTVQNGI-FPLPTVNFSGQVIPGS--
 QIPWKPNQPNIYGSYPKPN--IRNSPSGRQS-
 Homo NNPPAQNGI-GPLPAVNASGQGGPGS--
 QIPWRPSQPNIRENHPYPN--IRNFPSGRQW-
 Equus SNRTVQNGV-ILPPTVNI SGQGI PRR--

QIPWRPSQPKIHENYPNPN--IRNFPARRQW-
Ursus ----AQNGV-NSSPTVNVSGQAVPRT--
QIMWGPSQPNIHENYPNPN--NRNFPVGRQW-
Bos SNPTVQNN-----PVVNVSGQGVPRS--
QTPWRPSQTNIHENYPYPN--IRNFPAGRQW-
Sus SNPTGQNG-----PAVNVSGQGVPRS--
QSPWGPRQTIHENYPNPN--IRGFPARRQW-
Tursiops SNPTAQNS-----PAVNVSGQGVPRS--
QTPQGPSQTNIHENYPNPN--IRSFPAGRQW-
Allig_mississip NKPAGVNET-TPSPTVNISSPQEPGSEGVPQNGPEQPNARRNAPTLD-
IIQRFPANRQQ-
Allig_sinensis NKPAGVNET-TPSPTVNISSPQEPGSEGVPQNGPEQPNARRNAPTLD-
IIQRFPANRQQ-
Gharial NKPAVNGT-TPSPTVNISSPQQPGSEGVPQNGSEQPNAGRNTPTLD-
IIQRFPANRQQ-
Crocodilus_nilo NKPAVNGT-TPSPTVNISSPQEPGNEGVPQNGPEQPNAGRNTPTLD-
IIQRFPANRQQ-
Crocodilus_poro NKPAVNGT-TPSPTVNISSPQEPGNEGVPQNGPEQPNAGRSTPTLD-
IIQRFPANRQQ-
Aspidoscelis GKSIGG---PTLSPTDYVSGVNA-----IAQNGNNQSSLRPNSPSMN-
AIQNFPPDAQQ-
Shinisaurus SKLVSGNGVPTPSPTVLISGGNG-----AAQNGIDQSSHRPQFPNVN-
GVQSFPSGSQQ-
Ophisaurus SKLLSGNGVPTPSPSVLMMSGANG-----AAQNGIDQSSHRPKSSTVN-
GIQSFPSGSQQ-
Anolis NMFSGNAVSTSSPTTQTSEGG-----VAQNVLEQIRHRSKLPNGD-
VIQSFPSGRQH-
Eublepharis SRWHIGNGVPTLLPTLHVSNGDT-----
AAQNGMDQSVHRASSPNIYHIVQNLPSDQHQ-
MournGekko SRLIVNGVPTISPTLHVSKGDV-----
AAQNVMDQSIHRASSPNSNHIIQNLPSDKQQ-
Gekko_japon SRLIVNGVPTISPTLHVSKGDV-----
AAQNVMDQSIHRASSPNSNHIIQNLPSDKQQ-
Python NKFVSRNGIPTPSPTGRISGQNE-----VAQNGIDQLSYRPKPTNAN-
VFHNIFSDGQQ-
Boa_constrictor NKFANGNGIPTPSPADHISAQNE-----AGQNGIDQSNYKPKSTNAN-
VFHNLFSGSQQ-
Vipera ---VHVNGIPTPSPTGHMSGQNE-----AAQNGIDQSNYRPKSTNTN-
VFHNFFSGSQQ-
Protobothrops ---VHGNGIPTPSPTGHMSGQNE-----AAQNGIDQSNYRPKSTNTN-
VFHNFFPSGSQQ-
Crot_horrid ---VHGNGIPTLSPTGHMSGQNE-----AAQNGIDQSNYRPKSTDTN-
VFHNFFSGSQQ-
Crot_mitch ---VHGNGIPTPSPTGHRSGQNE-----AAQNGIDQSNYRPKSTDTN-
VFHNLFSGSQQ-
Thamnophis KKIVSGNGIPTPSPTGHMSGQND-----AVQNGFDQSNYRPKSTNTN-
VFRNFFSGSQQ-

Cobra KKIVSGNGIPTPSPTSHMSGQNE-----AAQNGFDQSNYRPKSTNTN-
VFHNFFSGSQQ-
Pantherophis KTIVSGNGIPTPSPTGHVSGQNE-----ASQNGFDQSNYRPKSTNTN-
VFHNFFSGSQQ-
Pogona SKLVDGNGFSTPSPTAHVSGGNG-----AAQDALEQSGHQPKSPN---
MIQSFPPASQQ-

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Ornithorhynchus
PFVHPFGRPFDRPVGRPVGRRDHGPTYGNTPKARGPLRWNAVTSSEKRV-ARPGYPMYRR
Monodelphis -----SQTSFPVGPRLMGPFYRNYPNQRSY-
QWPSLAYVSKQI-VRPGNTAYQK
Mus_musculus -----QTTGT-QGPRQNGPGYRNPOVERGP-
QWNSFAWEGKQA-TRPGNPTYGK
Rattus -----QTTDT-QGPKQNGPGYQNPQIQRGP-
QWNSFAWEGKQATTHPGNPTYHK
Cavia -----NPTHATGQRPPGPSYRNQPGQWDA-
QGNFAWEGKQA-AGPKNPTYHK
Homo -----YFTGTVMGHRQNRPFYRNQQVQRGP-
RWNSFAWERKQV-ARPGNPVYHK
Equus -----RPTGTATGNRQNGPFYRN-QVQRDP-
QWNSFAWEGKRT-VHPGNPIYRK
Ursus -----RPTGTIMGHRQNGPFYRNQQFQRGP-
RWNSFALERKQA-VRPGNPIYRK
Bos -----HPTGTSMGNRRNGPFYRNQQIQRAP-
RWNSFVLEGGQA-IRLGYPIYRR
Sus -----RPPGPAMGHRRNGPFYRNQQIQRGP-
RWNSFTLEGKQA-VRPGYPTYRR
Tursiops -----RPTGTATGHKRNGPFYRNQQIQRGP-
RWNSFVLEGGQA-VRPGYPIYRR
Allig_mississip -----MFGHGSFGHREYSQGYRSSLDQGAA-
RHRASAMVNPS-TPSENSLYRK
Allig_sinensis -----MFGHGSFGRREYSEGYRSSLDQGAA-
RHRAYAMVNPS-TPSENSLYRK
Gharial -----MFGHGSFGRREYSQGYRSSLDQGAA-
RNRASAFMVNPS-TPSENSLYRK
Crocodilus_nilo -----MFGHGSFGHREYSQGYRSSPDQGAA-
RHRASAFMVNPS-TPSENSLYRK
Crocodilus_poro -----MFGHGSFGHREYSQGYRSSPDQGAA-
RHRASAFMVNPS-TPSENSLYRK
Aspidoscelis -----SAGHG-----SNIYNLHPDMREP-
RHNAMISRGNFP-IRTENPNYVS
Shinisaurus -----STGHG-----SHVYKPHPDMGDT-
RHNTLISGGNPS-IQTENPTYPL
Ophisaurus -----PTGHG-----SHDYKPHPDMGDM-
RHNTLVSRGNPS-VQSENPTYPF

Anolis -----STMQV-----SNIHKPHEHMENT-KQN-
 LISRGNPS-IQSEDPTYPM
 Eublepharis -----STGNG-----LPVYKHYPGMENS-
 RPNTYISNGNPS-GHPETPTYPS
 MournGekko -----STGNG-----LHVYKPYPGMDES-
 RHNTYISRGNPS-GHPENPTYPS
 Gekko_japon -----STGNG-----LHVYKPYPGMDES-
 RHNTYISRGNPS-GHPENPTYPS
 Python -----SRGHS-----SYIYKANPDMSENT-
 RHNTLVSRGNPS-IQAENPTEPW
 Boa_constrictor -----SRGRS-----SYIYKPNTDMGNT-
 RHNTLVSRGNPS-IQAENPTEPW
 Vipera -----SRGRD-----SYIYKANPDMGNT-
 RYNTLVSRGNPS-IQAENPADPW
 Protobothrops -----SRGRD-----SYIYKPNSDMGNT-
 RHNTLVSRGNPS-IQAENPADPW
 Croc_horrid -----SRGRE-----SYIYKPNSDMGNI-
 RHNTLVSRGNPS-IQAENPADPW
 Croc_mitch -----SRGRD-----SYIYKPNSDMGNT-
 RHNTLVSRGNPS-IQAENPADPW
 Thamnophis -----SRGHG-----SDIYKPNPDMGNS-
 RHDTLISRGNPS-MQAENPEEPW
 Cobra -----PRGRG-----TYIYKPNPDISNS-
 RHNTLVSRGNPS-MQAENPKEPW
 Pantherophis -----SRGRG-----SYIYKPNPDMGNS-
 RHNTLVSRGNPS-MQAENPEDPW
 Pogona -----STGHV-----PHIYNPHSEMGA-
 RHNTLTFRGNPS-IQAENPSRSF

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Ornithorhynchus
 PFPVAAPGRGFPNRRAGNPLNLRKNPQAP-----
 Monodelphis VYPYISKSN-
 SPNHVSNPANNRRKPQGP-----
 Mus_musculus PPSPTSGV----
 NYAGNPVHFGRNLPGPKNKPFVGANPASNKPFGANPASNKPFGANPA
 Rattus PSPPTS RVN-
 YPNYAGNPVNFGRKLPKPKPFMGANPASNKPFGANPASNKPFGTNPA
 Cavia AYTPTS RKN-
 YPSYAGNPANFRRKLQGP-----
 Homo AYPPTS RGN-
 YPNYAGNPANLRRKPQGP-----
 Equus SYTPTT RGN-
 SPNNAGNPANIRRKPQGP-----
 Ursus AYASTARGN-
 SPNHAGNLGNFRRKPQGP-----

Bos AYASTVRGN-
 YPNYAGNPVNFRRKPEGP-----
 Sus VYGSTARSN-
 PPNYAGNSANLRRKPEGP-----
 Tursiops AYASTARGN-
 SPNYAGNPANFRRKPEGP-----
 Allig_mississip GPPDNSPIQ-----
 TNRRGDLQSR-----
 Allig_sinensis GPPDNSPIQ-----
 TNRRGDLQSR-----
 Gharial GPPDNSLIQ-----
 ANRRGNLQSK-----
 Crocodilus_nilo GPPDKSLIQ-----
 ANRRGNLQSK-----
 Crocodilus_poro GPPDKSLIQ-----
 ANRRGNLQSK-----
 Aspidoscelis AYGETI-----
 NHREGPQNA-----
 Shinisaurus GYGEDS-----
 NHRGNLHNT-----
 Ophisaurus GYAENS-----
 IHRGNLQNT-----
 Anolis GNGWNS-----
 NHRGNIQNT-----
 Eublepharis GYGDNS-----
 NQRGNLQNI-----
 MournGekko GYGESS-----
 NQRGNLQDI-----
 Gekko_japon GYGESS-----
 NQRGNLQDI-----
 Python VYGGNS-----
 IHRDNLQRI-----
 Boa_constrictor VYGDNS-----
 IHRDNLQRI-----
 Vipera VYRDNS-----
 VHRTDLQRI-----
 Protobothrops VYRDNS-----
 VHRTNLQRI-----
 Crot_horrid VYRDNS-----
 VHRTNLQRM-----
 Crot_mitch VYRDNS-----
 VHRTNLQRI-----
 Thamnophis VYRDNL-----
 VHRANLQRI-----
 Cobra VYRDNS-----
 VHRANLQRI-----
 Pantherophis IYRDNS-----

VHRANLQRI-----
Pogona GYRDNL-----
DPRGNLQST-----

Ornithorhynchus

Monodelphis

Mus_musculus

SNKPFVGANPASNKPFVGANPASNKPYVGANPASNKPFIGANPAANKPSIGTNPAANKPS

Rattus

SNKPFVGANPASNKPFVGANPASNKPFVGANPASNKPFVGANPASNKPFMGTNPAANKPS

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Allig_mississip

Allig_sinensis

Gharial

Crocodilus_nilo

Crocodilus_poro

Aspidoscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MournGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

Monodelphis

Mus_musculus IGTNPAANKPFVRNNVG-----
ANKPFVGTNPSSNQPFLLRSNQ

Rattus
IGTNAASNKPFVGTNAGTNKPFMGINVASNKPFMGTPASNKPFVGTNPASNKPFVRSNH
Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Allig_mississip

Allig_sinensis

Gharial

Crocodylus_nilo

Crocodylus_poro

Aspidoscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MournGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus -----
AKHPGEANSQGVVYSQRGGLMAPREPVASPOENPPSPREKPSFPTRGP
Monodelphis -----TKQPEEINGGLA-
GPKLGTAKHEEQIQNPKENSVTQRERITFPTRDP
Mus_musculus ASNKPFMRSNQASNKPFVGTNVASV-
GPKQVTVSHNMKTQNPKEKSLGQKERTVTPTKDA
Rattus ASNKPFVANAASNKPFVGTNVPSV-
GPKQVTVSHNMKTQNPKEKSLGQKERTVTPTKDT
Cavia -----NKPFVGTNVTPM-
SPKQGTIGRNEKIQNPKEKSLGQKESTINPTKGM
Homo -----NKHPVGTTVAPL-
GPKPGPVVRNEKIQNPKEKPLGPKQIIVPTKNP
Equus -----NKPPVVTNV-PL-
GPKHDTVLDLNEKVQNPKEKPPDQKE-IVIPTRDP
Ursus -----NKHPVGTNVAPL-
SPKQGTVVHNEKIQNPGEKPVGPKERIVIPTRDP
Bos -----SKQPEGT-IAPL-
GPKHGTTGHNENIQNPKEKPVSQKERIVIPTRDP
Sus -----NKNPMVTNVAPP-
GPKHGTVDQENIQNPKEKQVSQKERTVVPTRDP
Tursiops -----NKHPVGTNVAPL-
GPKHGTVGHNENIQNPKEKPVSQKEGIVIPTRDP
Allig_mississip -----PS-----NYPAL-NPRHGPSGSE--
FQQHGKRAAGQRQRPPFPDTHP
Allig_sinensis -----PS-----NYPAL-NPRHGPSGPE--
FQQHGKRAAGQRQRPPFPDTHP
Gharial -----PS-----NYPAL-NPRHGPSGPE--
LQQPGKRPAGQRQRPHFPDTHP
Crocodilus_nilo -----PS-----NYPAL-NPRHGPSGPE--
FQQPGKRPAGQRQRPHFPDTHP
Crocodilus_poro -----PS-----NYPAL-NPKHGPSGPE--
FQQPGKRPAGQRQRPHFPDTRP
Aspidoscelis -----NS-----NYPSI-
SNRPEPYGYQKQTRFHKINLPGQKEGMPFPSSDL
Shinisaurus -----NI-----NHPST-
GTEPIPYGQQEQPHYSGRNPLGQREREPFPRSDP
Ophisaurus -----NI-----NHPST-
VSGPNPYGQQEHPHYSGRNSLGQRERGFPSNP
Anolis -----NV-----NNPST-
NTRHIPYGQQEQPHYPERNEFSQIDSVPFPSSDP
Eublepharis -----NNN---NNIP-I-
NTRPNPYGQQEHPHYPERNPSNQRQILFPSSDP
MournGekko -----NSN---NNNPSI-
NARNPLYGQQEHPHYPERNPSDQRQILFPSSDP
Gekko_japon -----NSN---NNNPSI-
NARNPLYGQQEHPHYPERNPSDQRQILFPSSDP
Python -----NS-----NHPTV-

NNRPN SYGQQEELRYPGNNPSRWR-----PSSGR
 Boa_constrictor -----NS-----NHATA-
 NNRPN SYGQQEELHYPGNNPSSWRA---NPSSGP
 Vipera -----NS-----NHPTA-
 KNRPN TFGQQEKSHYPGNNPSSWRA---DPNSGP
 Protobothrops -----NS-----NHPTA-
 KNRPN TFGQQEKSHYPGNNPSSWRA---DPSSGP
 Croc_horrid -----NS-----NHPTA-
 KNRPN TFGQQEKSHYPGNNPSSWRA---DPSSGP
 Croc_mitch -----NS-----NHPTA-
 KNRPN TFGQQEKSHYPGNNPSSWRA---DPSSGP
 Thamnophis -----NS-----NHPTA-
 KNRPN SYGQQEKVHYPGNNPSSWRA---HPSSDP
 Cobra -----NS-----NHPTA-
 KNRPN SYGEQEKFHYPGNNPSSWRA---HPSSDP
 Pantherophis -----NRE---LNYP-PA-
 KNRPN SYGQEEKFHYPENNPSSWRA---HPSSDP
 Pogona -----NS-----NQAMA-
 NPRPISYGPQEQSHLPGRSPSGQREIMPIPTSDP

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Ornithorhynchus AVPWRKPQNYGPGKPVYR--PPLSEGRP-
 ADPGSPFPDPRENPHYPRGDATDRRFLSSGG
 Monodelphis TSTWRNSQGYETNKSNYK--LTPPQGSP-SVPSVNSVDQPEN-
 YYP RVDS--RRFPAS--
 Mus_musculus SNPWRSAKQYGINNPNYN--LPRSEGS-
 VGPNFN SF DQ QENS YF SK GAS--KRV P SP NI
 Rattus GNPWRSSKQYGINNPNYN--LPHPEGS-
 VGPNFN SF DQ QEN TYF SR GD S--RKV AS P NR
 Cavia SGWRNSQYPGVNKPNY--WPHPEDNM-
 LGPNFN SVN QYENS Y PR GEV--IKV P SS NA
 Homo TSPWRNSQYEVNKSNYK--LPHSEGYM-
 PVPNFN SV DQ HENS Y PR GD S--RKV P NS DG
 Equus PGPWRN SEDY GINK P NYK--LPHSEGN I-
 LVPNFN SV DQ REN S Y PR GD I--IRAP NY DG
 Ursus SGPWKNSQDYGVNKSNYK--LPHPESNM-
 LVPSFN SIDQHENS Y PR GD S--RRAP NS DG
 Bos NGPWRNSQDYGVTKSNYK--LPHPEGNI-
 LVPNFN SIDQHENS Y PR GD S--RGT P NS NG
 Sus SGPWRNSQDY GINK S NYK--LPQPEDNM-
 LVPNFN SIDQHENS Y PR GE S--KRAP NS DG
 Tursiops SGPWRNSQDYGVNKSNYK--LPHPEDNM-
 LVPNFN SIGQRENS Y Y LR GD S--RRAP NS NG
 Allig_mississip LSQRQNAPSYSNNRAGYKKGII LPDSKP-
 PAPT FNTVGTNEHTQHSQDDA--SRIPASGL
 Allig_sinensis LSQRQNAPSYSNNRAGYKQGIILPDSKP-

PAPTFNTIGTNERTQHPQDDA--SRIPASGL
Gharial LSQWQNAPSYSNNRAGYKQGIILPDSKP-
PAPTFNTIGTNEHTHHPQEDA--NRIPASGL
Crocodilus_nilo LNQWQNAPSYSNNRAGYKQGTILPDSKP-
LAPTFNTIGTNEHTHHPQEDA--NKIPASGL
Crocodilus_poro LNQWQNAPSYSNNRAGYKQGTILPDSKP-
LAPTFNTIGTNEHTHHPQEDA--NRIPASGL
Aspidoscelis KNQWIKDPVYRDNGLHNP----PPEGHS-LDP---
PLRETENVFNAKENI--DPSKPSRM
Shinisaurus PGQWNKDPIYRDNSLNGS----PPEGHS-
LDPQFNTLERAENVYNAREGF--DRFQPSGM
Ophisaurus LGQWNKDVPYRDNSLNSS----PPEGHS-
LDPQFNTLGRPENAYNAREEF--DRFQPSGM
Anolis VGQWNKDPIYRDNDPKNS----PPEGHP-LDPQFKTM-
RIDNIYNARQDA--ERFQPSGM
Eublepharis QSQWNKDVPYRDNNLNSF----PPEGHS-
MDPQFNTLGAENSYNTRKET--DLFQPSGV
MournGekko QSQWNNDPVYRDNSLNSF----
PPEGTSGVDAQFNTLGAENSYNIRKDT--DQFQPSGM
Gekko_japon QSQWNNDPVYRDNSLNSF----
PPEGTSGVDAQFNTLGAENSYNIRKDT--DQFQPSGM
Python GPQWSKNPAHGDNKQPSS----PSESHS-L-----
YQVEEKT--GMYQPSRM
Boa_constrictor GPQWNSNLAYRDNKQPSS----PSESHS-L-----
YKVEENT--DMYHPSRM
Vipera GPQWNKNPTYGGNKQPSS----PLESHS-L-----
KKVEENS--DMYHPSRK
Protobothrops GPQWNKIPTYGGNKQPSS----PLESHS-L-----
KKVEENS--DMYHPSRK
Crot_horrid GPQWNKIPTYGGNKQPSS----PLESHS-L-----
KKVEENS--DLYHPSRK
Crot_mitch GPQWNKIPTYGGNKQPSS----PLQSHS-L-----
KKVEENS--DMYHPSRK
Thamnophis GPQWNKNPAYGRHKQPSS----PPESHs-L-----
NKVEENS--DWHYHPSRK
Cobra GPQWNKNPAYGGNKQPSS----PSESHS-V-----
NKLEENT--DRYHPSRK
Pantherophis GSQWNRNPAYGDNKQPSS----PPEGHS-L-----
NKVEENT--DRYHPSRK
Pogona PSRWNKDPVYRDNYLHNS----PPEGHS-
VDPQINTLR-----RPSGM

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Ornithorhynchus SAPGRHFPEGIVLKP-----EDDQPPSKQKPFHP-VTSERTP---
REPSPTKP--QRT
Monodelphis -IQASNFPKGI VSEPRKGPSDSEINPPEIKHGTHQT----
DEGPYPPKESFFLRSN-TWN

Mus_musculus QIQSQNLPGIALEPRRTPFQSETKKPELKHGTHQP-
AYPKIPSPTRKHFFAERN-TWN
Rattus QIQSQNLPGIALEPRRTPFESETKRPELKHSTNMP-
VYPKKNPSPTRGHFPAGRN-NWN
Cavia KTQSQNFPKRVALEPKRIPYESQTMQPELKHSTHQP-
IYPEVIPSFKREHFPAGRN-TWS
Homo
QTQSQNLPGIIVLGSRRMPYESETNQSELKHSSYQPAVYPEEIPSPAKEHFPAGRN-TWD
Equus QTQSQNLPGIILEPRRIPYESETNQPELKHSTYQP-
VYPEETPSPAREHFPTERN-TWN
Ursus QTQTQNLPGIILEPRRNPYESETNQPELKHSTYQP-
VYQEEIPSPAREHFPAGRN-TWN
Bos QTQSQNLPGIILEPRRIPYESEINQPEIKHSTHQP-
VYPEGSPSPARERFPAGRN-TWN
Sus QTQTQIIPKGIIVLEPRRIPYESETNQPELKHSAAYQP-
VYTEGIPSPAKEHFPAGRN-TWN
Tursiops QTQSQNLLKGIILEPRRIPYESEINQPELKHSIYQP-
VYPEGFPSAREHFNAGRN-TWN
Allig_mississip QLTSQATPKGVFLDARRHPSTPEASQORDWEKQAVNP-----
SYPEREHFPLSGSKMWR
Allig_sinensis QLTSQATPKGVFLDARRHPSTPEASQORDWEKQAVNP-----
SYPEREHFPLSGRKTWR
Gharial QLTSQPTPKGVFLDARRHPSTPETSQORDWEKQAVNP-----
SYPEREHFPLSGSKTWR
Crocodilus_nilo QLTSQPTPKGVFLDAKRHPSTPEASQODWEKQAVNP-----
SYPEREHFPLSGSKMWR
Crocodilus_poro QLTSQPTPKGVFLDARRHPSTPEASQODWEKQAVNP-----
SYPEREHFPLSGSKTWR
Aspidoscelis HQSNTRSHWDTF SATSMTPFETATNQHTWKERFFIP-----
PDHERELYSPPQKQIWR
Shinisaurus HQSSTFSHRGVFSATSRTPLETETHQYDRKEQSFNH-----
PYHEREQFPSSQNHMWK
Ophisaurus HRSNTLSHQGVFSATRRTPFETE AHQYDWKEQSFNH-----
PDREREQFPSSQNHMWN
Anolis HQSNALSHQGVNLATRRTPF EIETHQYDWREQPFNH-----
IDQKRGQFLSAQTPTWN
Eublepharis HQLSSLSPQGVFSPTKRTLSEAETHQYPWKEQVFNPN-----
PVYKREQFSPPQNQEWN
MournGekko HQLSSLPPQGVFLPTKRTLSEAETSQYHWKEQGFNS-----
PVHEREQFLSPRNHVWN
Gekko_japon HQLSSLPPQGVFLPTKRTLSEAETSQYHWKEQGFNS-----
PVHEREQFLSPRNHVWN
Python QQSNGLSHQEIVLDTRGTPFETETHKNDWKEPSFIH-----
PDHQREQFPSSQNMWN
Boa_constrictor QQSNGLSHQEIFLDTKGTPFETETHKNDWKEQSFYI-----
PDHQREQLPSLQNMWN
Vipera QQSNGQFHQETFLDTRGIPFEKKAHKNDWKEQSFYI-----

PDHQREQFPSLQNMWN
 Protobothrops QQSNGQFHQETFLDTRGIPFEKEAHKNDWKEPSFIH-----
 PDHQREQFPSLQNMWN
 Croc_horrid QQSNGQFHQETFLDTRGIPFEKEAHKNDWKEPSFIH-----
 PDHQREQFPSLQNMWN
 Croc_mitch QQSNSQFHQETFLDTRGIPFEKEAHKNDWKEPSFIH-----
 PDHQREQFPSLQNMWN
 Thamnophis QQSNGQSHPEIFSDTRGTPFEKEAHKNDWDEQSFH-----
 MDHQKGFPSLQNMWN
 Cobra QQSNGQSHHDIFLDTRGTPFEKEAHKNDWNEQSFH-----
 PDNQREQFPSLQNMWN
 Pantherophis QQTNSQSHQDLFSDTRGTPFEKEA-----FIH-----
 PDHQREQFPSLQNMWN
 Pogona QQPNI LSEQEIFPSTKRTPFETETHWYDWKQQLPNP-----
 PDREERERFPSAQNMWS

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Ornithorhynchus SPEPPPPLEEGPGRQDKSLTYPPISPRSG-IPYDPH---HP----
 YDPK-----GTW
 Monodelphis LQKGSPIFEDEPTKQEGSLLYPALGAREN-VPYPEY---VP----
 YDPQRSSLYARGNMW
 Mus_musculus RQKILPPLKEDYGRQDENLRHPSYGSRGN-IFYHEY---TN----
 PYHNEKSQYIKSNPW
 Rattus HQKTL PPLKEGHGRKEENLRHPPYGSRGN-VFYHEY---NN----
 PYPNEKSPYLRGNTW
 Cavia HHEIPPPFKEDPGKQDKHLPHVSPGSQDS-VFYHKY---NS----
 FYTRENTPYTGSNTW
 Homo HQEISPPFKEDPGRQEEHLPHPSHGSRGS-VFYPEY---NP----
 YDPRENTPYLRGNTW
 Equus HQEISPHFKEDPGRQEEHLPHPSLGSRRG-VYYPDY---YP----
 YDPRENTPYFRGNAW
 Ursus HQEISPSFKEDPGRQEEHLPHPSHGSRGG-VYYPDSYYPNS----
 YDPRENTPYPRSNW
 Bos QQEISPPFKEDPGRKEEHLPHPSLGSRRG-IYYTDY---NP----
 YDRRENTPYLRNSW
 Sus QQEISPPFKEDPGRQEEHLPHLSHGSRVH-VYYPDY---NP----
 YDPRENTPYLRSNW
 Turciops QQEISPPFKEDPGRHEEHLPHPSHGSGGR-VYYPDY---NP----
 YDPRENTPYPRSNW
 Allig_mississip HQONSPPFEAGLHESSTYPPGALFGQRGS-VSYPEY---NS----
 FNQKGIPHFSQGSW
 Allig_sinensis HQONSPPFEAGQHESSTYPPGALFGQRGS-VSYPEY---NS----
 FNQKGIPHFSQGSW
 Gharial HQONSPPFEAGQHESSTYPPGALFGQRGS-VSYPEY---NS----
 FNQKGIPHFSQDSW
 Crocodilus_nilo HQONSPPFEAGQRESSTYPPGALFGQRGS-VSYPEY---NS----
 FNQKGIPHFSQDSW

Crocodilus_poro HQQNSPPFEAGQRESSTYPPGALFGQGRS-VSYPEY---NS----
 FNQKGIPHFSQDSAW
 Aspidoscelis NQEDSRVFRESPSRYNSIFSTGSFHQKGH-ATYSEK---NS----
 YGQRSQSFYP--SPW
 Shinisaurus NQEDPQGFQEVPPRYNSIYSSGSLNHRGH-ATYTEK---NS----
 YGQHTHSFFP--RAW
 Ophisaurus NQEDSRGFREVPPRYNTMYSSGSLNRRGH-AAYAEN---NS----
 YGQHTQSLSP--STW
 Anolis NREASQLFQEAPPRQSSMYSSGSFNQREM-PTYSGK---KS----
 YNQYTHPFPP--RAW
 Eublepharis KQEELQVFQDDPPRYNSRHSSGYFGQRSNRISYPEK---SS----
 YDQPPRSFYP--ETW
 MournGekko KQEDLQVFQDDPPRYNSRHSSGYFGQRER-LSYPEK---SS----
 YAQPPRSFYP--DTW
 Gekko_japon KQEDLQVFQDDPPRYNSRHSSGYFGQRER-LSYPEK---SS----
 YAQPPRSFYP--DTW
 Python -QKDLEIVQEVPPGYNSVTSSGSFHQRGH-DTYADK---NF----
 YSQQTPSFYP--RAW
 Boa_constrictor -QKKLEVVEAPPRYNSVYSLGFSFHQOGH-TTYADK---NS----
 YSQQTPSFYP--RAW
 Vipera -QKDLAMVKEAPPGYNSVYPPGSFHQREH-ATYSDK---TF----
 YSQQAPSFYP--RAW
 Protobothrops -QKDLEMVKEAPPGYNSVYSPDSFHQRGH-ATYSDK---NF----
 YSQQAPSFYP--RAW
 Croc_horrid -QKDLEMVKEAPPGYNSVYSPDSFHQREH-ATYSDK---NF----
 YSQQAPSFYP--RAW
 Croc_mitch -QKDLEMVKEAPPGYNSVYSPDSFHQREH-ATYSDK---NF----
 YSQQAPSFYP--RAW
 Thamnophis -QKNLEIVKETPPGYNSAYSPGSFHQRGH-ATYSDK---NS----
 YREEAPSFHP--RFW
 Cobra -QKDLEIVKETPPGYNSAYSPGSFHQREH-ATYSDK---NS----
 YRQQAPSFYP--RFW
 Pantherophis -QKDLEVVKGAPPGYNSAYSPDSFHQRGR-ATYSDK---NS----
 YRQQAPSFHP--RFW
 Pogona SRENSQIFQDAPPRYNSMYSLDSIHQRGQ-EIYSER---
 NSFRNPYQQNGHPSTS--RTW

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Ornithorhynchus
 DEGNEPTSSGPAEQPGRQSPSPRGMQRGEVPYNEEDPVDPTGDEPN-LGPGPWE-ET
 Monodelphis
 DEGDEFPGTFRPAGQPGNPLHSLNSPSGQRHRSTDNEEDPIDPTGDEFY-RGPDAGG-KE
 Mus_musculus DK--SSPSTM---MRPENPQYTMSTL-
 DQKETEQYNEEDPIDPNEDESFP-GQSRWGDEE
 Rattus DKRISTPGTM---MQPENPQYTMSSL-
 DQKETEQYNEEDPIDPNEDESFP-GQSRWGDEE

Cavia EKRADSPKT-----QAKTPQYPLKNT-
DQKETIQYNEKDPSDPTRHGPF-PGLSRWGEEV
Homo DERDDSPNTM---GQKESPLYPINTP-
DQKEIVPYNEEDPVDPTGDEVF-PGQNRWG-EE
Equus DERNYSNTM---GRLKNPLYPVNTP-
DVKETVLYNEEDPTDPTGGAEF-PGQSRWGVVE
Ursus DERDDSPNNI---GQPKNSLYPINTP-
ELKETVPYNEEDPLDPTGDESF-PGQSRWGMEE
Bos DERNDPNTM---GQSENPHYPMNTP-
DPKETIPYNEEGPADPTGDETF-PGQTRWSVDE
Sus YERDDSPNTM---GQPENPHYPMNTP-
DPKETIPYNEEDPIDPTGDEHF-PGQSRWDMEE
Tursiops AERDDSPNAM---RQPENPHYPMNTP-
DPKKTIPYNEEDPIEPTGDESF-PGQSRWSVAE
Allig_mississip ENSPVS-----PAGQRGNPLYPLDS--
SOREGGPHYENDPFDQLGPDSY-PGQRTWDQEQ
Allig_sinensis ENSPVS-----PAGQRGNPLYPLDS--
SOREGGPHYENDPFDQLGPDSY-PGQRTWDQEQ
Gharial ENSPVS-----PAGQRGSHLYPPDA--
SOREGNPHYENDPFDQLGPDSY-PRQRIWDQEQ
Crocodilus_nilo ENSPVS-----PEGQRGNSLYPPDA--
SOREGNPHYENDPFDQLRPDSY-PRQRTWDQEQ
Crocodilus_poro ENSPVS-----PEGQRGNSLYPPDA--
SOREGNPHYENDPFDQLRPDSY-PRQRTWDQEQ
Aspidoscelis EDRESSP-TVGPADQREHRSYSPPLTSDQMQRNIYHRD---
IPLQHELY-HKQHPWTDEK
Shinisaurus EDGENSP-TMGPPVQRESPSYSPALPSNQMQRNTYQRS---
AQOEHEPY-ARQNLRTHEM
Ophisaurus EDRESSP-TLGSQVQRESPSYSPALPSNQMQRNTYQRN---
MQOEHEPY-SRQNLWTHEM
Anolis EDREHSP-TISPSDQRESSPYPPVSPSDQIQRNTYYRR---
IQPEYEPY-PRQDPWTREQ
Eublepharis EGRENSP-TLGPAGQKERPFYSP-----
QMQRNSYRRSDPVVQOESEMY-PRPSPWAQEK
MournGekko EGRESSP-TLGPAGQREHPLYSSAVPSNQVQXXXXXXXX---
XXXXXXXXY-PRQTPWAHEK
Gekko_japon EGRESSP-TLGPAGQREHPLYSSAVPSNQVQXXXXXXXX---
XXXXXXXXY-PRQTPWAHEK
Python EDKENLP-TIQPLGQRERPYNSPILPSNQMHRSNYHGS---
IQOEHEFHQSRQNIWPHEK
Boa_constrictor EDKENLP-TTEPLGQRERPFYSPVLPSPDVHRSTYHGN---
IQOEHELY-SRQNIWPHEK
Vipera DDKENLP-TIEPLGQ--RGSYSPLLPSDQMHRSEYHGS---
IQOENEPY-SRQNIWPHEK
Protobothrops DDKENLP-TIEPLGQ--RGSYSPLLPSDQMHRSEYHGS---
IQOENELY-SRQNIWPHEK
Crot_horrid DDKQNLN-TTEPLGQ--RGSYSPLLPSDQMHRSEYHGS---

IQQENELY-SRQNIWPHEK
 Croc_mitch DDKQNLPTTEPLGQ--RGSYSPLLPSDQMRNEYHGS---
 IQQENELY-SRQNIWPHEK
 Thamnophis DDKENLPTVEPLGQRERPSYSPLLPSDQMRSEYHES---
 IQQENELY-SRQNIWPQEK
 Cobra VDKENFP-TIEHLGQRERPSYSPLLPSDQMRSEYHGS---
 IQQENELY-SRQNIQPHEK
 Pantherophis EDEENLPTIEPPGQRERPSYSPLSPSYQMRSEYHGS---
 IQQENELY-SRQNIWPHEK
 Pogona EERKDSP-VTGSTGQRERLSYSPILPSNQMQKNHYHRS---
 VQQEHEAH-PNQNPPWVDEK

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Ornithorhynchus ANGKED--PSRYHKSPQYPQSRATEPQDYPPYPEG-GLEK--
 HRDFPYGDFYPRGPEDNL
 Monodelphis SNFKGS--QVRYRERYPYAPSHPSKPKEYPQHSTD-NLERQ-R-
 NPSYGEYYPW----HF
 Mus_musculus MNFKGN-PTVRQYEGEHY---ASTLAKEYLPYSLN-NPPKP-
 SEDFPYSEFYWPWPQETF
 Rattus LSFKGN-PTLRQYEGEQY---TSTLAKEYLPYSLN-NPPKP-
 SEDFPYSEFYWPWPHETF
 Cavia LSFNER-PMGRHNDGKQY---ASNQPKEYLPYPLD-NPSKP-
 REESPYTDFYPWSLDETF
 Homo LSFKGG-PTVRHYEGEQY---TSNQPKEYLPYSLD-NPSKP-
 REDFYYSEFYWPSPDENF
 Equus SSLKQG-PTVRHYEGEQY---TSNQOKEYLPYSLD-NPSKP-
 REDFPYGEFYWPWPDENF
 Ursus TSFKEG-PTVRHYEGEQY---TSNQPKEYLPYSLD-NPSKP-
 REDFPYGEFYWPWPDENF
 Bos SNFKTA-PTAR-YEGKQY---TSNQPKEYSPYSLD-NLPPK-
 REYFPYGEFYWPSPDENF
 Sus LSFKED-PTVRHYEGEQY---TSNQPKEYLPYSLD-NPSKP-
 REDFLYGEFYWPWPPEENF
 Tursiops SSFKGD-PTVRHYESEQY---TSNQPKEYLPYSLDINPSKP-
 RKDFPYGEFYWPSPDENF
 Allig_mississip PLPEAEGSPAGQYGNPQYLPSNPAEQEVYFQYSKD-----Q-
 GRYFPYNEISPWAPEDNY
 Allig_sinensis PLPEAEGSPAGQYGNPQYLPSNPAEQEVYFQYSKD-----Q-
 GRYFPYNEISPWAPEDNY
 Gharial PLPEAEGSPAGQYGNPQYPPNPAEQEVYFQYSKD-----Q-
 GRYFPYDEISPWAPEDNY
 Crocodilus_nilo PLPEAEGSPAGQYGNPQYPPSNPAEQEVYFQYSKD-----Q-
 GRYFPYDEISPWAPEDNY
 Crocodilus_poro PLPEAEGSPAGQYGNPQYPPSNPAEQEVYFQYSKD-----Q-
 GRYFPYDEISPWAPEDNY
 Aspidoscelis QLLDLD----RQYRNDPY---SPTQHMYMPKYSIE-NPFSQ-
 RSNLPHYEEIGTWNAEENP

Shinisaurus HLLDLD----KQYRNPSY---NPSQHHAYPKYSTE-NPSND-
 RGNLPYKEINQWTPEERS
 Ophisaurus RFLDLD----RHYRNPPY---NPSQRHAYPNYSTE-NPAND-
 RGNLPYEGINQWTPEERP
 Anolis HLHDPD----NQYSNSPY---NPTHHQTYQKYTTE-NPPSE-
 ISNLPYRKINQWTQEEHS
 Eublepharis HLHDLDD----REYRNIPY---SPTQQHAYPKYSPE-
 NPSDQQRSNVPYKEIHPWIPEEHS
 MournGekko HLLDQD----REYRNPPY---NPTHQHAYPKYSPE-
 NPSNQRRGNAPYTEINPWIPEEHS
 Gekko_japon HLLDQD----REYRNPPY---NPTHQHAYPKYSPE-
 NPSNQRRGNAPYTEINPWIPEEHS
 Python HLADLD----RQYQNPPY-----NPKYSTE-HTANE-
 RGNLPYEEINRRIP-EHS
 Boa_constrictor HLADLD----RQYQNPPY---NPNEHHVNPKYSTE-HPTNE-
 RDNLPYEEINRQIP-EHS
 Vipera HLADPD----IQYQNPPY---NPSEHHINPKYSIE-HPANG-
 RGNLPYEEINRQIP-EHS
 Protobothrops HLADPD----IQYQNPPY---NPSEHHINPKYSIE-HPANG-
 RGNLPYEEINRQIP-EHS
 Croc_horrid HLADPD----IRYQNPPY---NPSEHHINPKYSIE-HPANG-
 RGNLPYEEINRQIP-EHS
 Croc_mitch HLADPD----IRYQNPPY---NPSEHHINRKYSIE-HPANG-
 RGNLPYEEINRQIP-EHS
 Thamnophis HMTDPD----IQYQNPPY---NPSEHHINPKYYTD-QPANE-
 RGNLPYEEINRRI-----
 Cobra HLADPD----IQYQNHPY---NPSEHHINPKYYTE-QPANE-
 RGNLPYEEINRWIP-EHS
 Pantherophis HLADPD----IQYQNPPY---NPS---INPKYYTE-QPAND-
 RGNLPYEEINRRIP-EHS
 Pogona HLLDVD----REYKNPSY---NPPQYPMHPRFSTE-TPPNE-
 RDNLPYERMNQWTPEKHI

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Ornithorhynchus QPYNGADQL--PVEGRGYT-
 HDAVGQGGPLQFPSRDSWDWGLRSAAQE-----RRAP
 Monodelphis
 PPYNFAPPLTPPRENSGYYYPPNALEQEESTPSPSWGSDQKNYVPAKK-----GRIP
 Mus_musculus PIYNPGPTIAPPVDPRSYYV-
 NNAIGQEEESTLFPSWTSWDHRNQAERQK-----ESEP
 Rattus PIYNPGPTIAPPVDPRSYYV-
 NNAVGQEEESTLFPSWTSWDHRNQAERQK-----ESEP
 Cavia PSYSPGPTVSPGKNRGHQV-
 NNAMRQEGSALFSPNSWDQGIQVQGGQ-----ESEP
 Homo PSYNTASTMPPPIESRGYYV-
 NNAAGPEESTLFPSRNSWDHRIQAQGQR-----ERRP
 Equus LSYDTAPTVLPPVENKGYT-

SDVIGQEENTPFPSWNSWDHRIQAQGQK-----EIRP
Ursus PSYNTAPTVPVPPVESRGYYA-
NNAVGQEEESTLFPWNSWDHRIQTQGQK-----ERRP
Bos PSYNTAPTIPLLVENRGYYP-
TNAVGQEEENTMFPWNSWDHMQVQVQGQK-----ERRP
Sus PSYNTAPTIVSSPVESRGYYA-
NNAVGQEEESTMFPWSSWDPRIQAQGQK-----EGRP
Tursiops PSYNTAPTEPRPVESRGYYA-
NNAVGQEEESTMFPWNSWDHRIQAQEQK-----ERKP
Allig_mississip PLYKVGPPR--QTENIPYHL-KREFGPRGSI-----
PWDQETNPLPQNFNPPPHPGRSQ
Allig_sinensis PLYKVGPPR--QTENIPYHL-KREFGPRGSI-----
PWDQETNPLPQNFNPPPHPGTSQ
Gharial PLYKVEPPR--QTENIPYHL-KRESGPRGSI-----
PWDQETNPLLQNFNPPPPQGRSQ
Crocodilus_nilo PLYKVEPPR--QTENIPYHL-KREFGPRGSI-----
PWDQETNPLLQNFNPPPHPGRSQ
Crocodilus_poro PLYKVEPPR--QTENIPYHL-KREFGPRGSI-----
PWDQETNPLLQNFNPPPHPGRSQ
Aspidoscelis PAFNAEHLR--QTEDIPIY----PVFREKEMNA-
QNQWLDSPQRITQVP-----VRTQ
Shinisaurus PVHGAEHLR--HTENIPYRM-NNVFGHRERNL-
QNQRSSSALQSTTLLQ-----GGPQ
Ophisaurus PVHSIEPLR--RTENFPYRM-SNVFGPRERNL-
QSQRSSSPLQSATFHQ-----GGPQ
Anolis PVHTAGHLR--QMENVPYRT-NSKFEQGERKF-QNVGSGSPQQRNT-
FQ-----EEAQ
Eublepharis PPYTAEYLW--QTEGIPDRK-SNAFGHPERTY-
QNEGANSPSQGPTLVQ-----RVPQ
MournGekko PPYAAEHLR--QTENIPYRR-NNEFGHRERNF-
PNEGANSPPQSTTLLQ-----GGSR
Gekko_japon PPYAAEHLR--QTENIPYRR-NNEFGHRERNF-
PNEGANSPPQSTTLLQ-----GGSR
Python PVGGSEH-----YENIPYHI-SNTFGHTERNL-
PYQGLYSPPQSSNLFQ-----GRSH
Boa_constrictor PVRGPEH-----YENVPYHI-SNTFGHIERNL-
PHQGPYSPPQSSKLFQ-----GRSH
Vipera PVHGSEH-----YEHIPYHI-SNIHGHTERNL-
PYPGPYPAPKTSHLFQ-----GRSP
Protobothrops PVHGSEH-----YEHIPYHI-SNTHGHTERNL-
PYPGPYPPPQTSNLFQ-----GRSP
Crot_horrid PVHGSEH-----YEHIPYHI-SNTHGHTERNL-
PYPGPYPPPQTSNLFQ-----GRSP
Crot_mitch PVRGSEH-----YEHIPYHI-SNTHGHTERNL-
PYPGPYPPPQTSNLFQ-----GRSP
Thamnophis PVHGPEH-----YENVPYHI-SNTHGQIGRNP-PYP-
PYPPPQTSNLFQ-----GRSP

Cobra PVHGSEH-----YENVPYHI-SNTHGPPEKNL-
PYPGPYPPQTSNIFQ-----GRSP
Pantherophis PVHGSEH-----YENVPYHI-SNTHGHTERNP-
RYPGPYPPSQTSNLFQ-----GRSP
Pogona FIPVTEHLK--PVENIPYHT-NGMFGQKDQNM-
GNQGSNSPPQSI SLSQ-----RGAQ

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Ornithorhynchus YDE-RDSWDHAINSPKSTAGA---TETLSPSHSVPAGIRGKP--
HEESVD--WSYRGGQV
Monodelphis YYN-RYFWDQATNLHKSAASALEQREHQPHSSSFPAGLRGS-
TYQETEN--LNYDSVHN
Mus_musculus YFN-RNVWDQSINLHKSNI--P----NHPYSTTSPARFPKDP-
TWFEGEN--LNY-DLQI
Rattus YFN-RNVWDQSM LHKSNIQNP----NHPYSTTSPAGFPKDP-
TWLEGEN--LNY-DLQI
Cavia QFH-RNYWDQATNLHE--VGPPNQRRNYPYPSQPHVGLQKTP-
TWQEGKN--LNY-DMQM
Homo YFN-RNIWDQATHLQKAPARPPDQKGNQPYYSNTPAGLQKNP-
IWHEGEN--LNY-GMQI
Equus YFN-INFWDQPTNLHKAPANPPHQKENQPYSSNSPAGLQKNP-
TWPEGEN--LNY-GMQI
Ursus YFN-RNFWDQPTTLHKAPSPPHQKENQPYPSNSPAGLQKIP-
TWREGEN--LNY-GMQI
Bos YFT-RTFWGQPTNLPKAPASPPYHKENQPYFSNSPTGLQKDP-
TWHEGEN--LNY-GMQI
Sus YLN-RNFWDQSTNLYKTPTSSPHQKENQPYSNNSPAGLQKNP-
TWHEGEN--LNY-GMQI
Tursiops YFN-RNFWDQPTNLHKAPASSPYQKENKPYSSDSPAGLQKNP-
IWHEGEN--LNY-GMQT
Allig_mississip FLT-RSPRDPE-----
MGSPVQTERTPH-----
Allig_sinensis FLT-RSPRDPE-----
MGSPAQTERNPH-----
Gharial FLT-RSPRDPE-----
MGSPAQTERTPY-----
Crocodilus_nilo FLT-RSPRDPE-----
VGSPAQTERTPY-----
Crocodilus_poro FLT-RSPQDPE-----
VGSPAQTERTPY-----
Aspidoscelis YTE-RDTWAPKR-----VGSSVQEEPSPYFNAYQKHFRNP-
TVSEGRKEVIPG-SVPF
Shinisaurus YAEKRNTWVPQM-----GGSSAQKDTSPYYNTYSTDFRRNP-
TYTEDTGGAHV-SAPI
Ophisaurus YIE-RDTWVPPR-----VASSTQKDTPPYYNGYSTDFRRNP-
TYSEDTGDAIHA-RAPI
Anolis YAE-RNTWVPQR-----VDPSAQKETAPYYNIYSTDFRGNP-

THVEDRERIIHM-NAPI
 Eublepharis YSE-RDTWGPER-----MGPSVQKEASPYFNSYPPDFRRNP-
 THMEDTR-----SAPM
 MournGekko YPE-RDTWSPHR-----MGPSIQKEASPYFNSYSPDSRRNP-
 THMEDAG-----GAHI
 Gekko_japon YPE-RDTWSPHR-----MGPSIQKEASPYFNSYSPDSRRNP-
 THMEDAG-----GAHI
 Python YDE-RDTWAPQK-----VDQVAPKETSPYFNTYSTNFRRNP-
 TRTEDAWRAIHM-RAPI
 Boa_constrictor HDE-RNTWTPEI-----VDPAALKETSSYFNTYSTNFRRNP-
 TQIEDTWK-IHM-SAPI
 Vipera YDE-RDTWGPKL-----ADPSAPKETSSYFNPYSTNIRRIP-
 THTEDTWRTIHI-NPPI
 Protobothrops YDE-RDTWAPKV-----ADPSAPKETSSYFNPYSTNIRRNP-
 THTEDTWRTIHI-SAPI
 Croc_horrid YDE-RDTWAPKV-----ADPSAPKETSSYFNPYSTNIRRNP-
 THTEDTWRTIHI-SAPI
 Croc_mitch YDE-RDTWAPKV-----ADPSAPKETSSYFNPYSTNIRRNP-
 THTEDTWRTIHI-SAPI
 Thamnophis YDE-RDRWAPKV-----ADTSAPKETSSYFNTYSSNIRRNP-
 TYTEDTWRAIHI-SAPF
 Cobra YDE-RDTWATKV-----ADPSTLKETSSYFNTYSSNIRRNP-
 TYTEDTWRAVHI-SAPI
 Pantherophis YDE-RDTWAPKV-----ADSSAPKETSSYFNTHSSNIRRNP-
 TYTEDTWKAIHI-SAPF
 Pogona YAE-RSTWVPPI-----
 LGPSPQKETSYPFNAYSTDLRRKSDDDIDDTGKITHG-SAPL

Ornithorhynchus
 SDLGVPEAEGPALMEPVARS DPADPREASSYPVAVARSSCCAGGSPGPRDVPLAPPDYPP
 Monodelphis
 NRINTPEKGQFPVTDSVIQNNLIYQGEVYSYSPASQRSPCCAGESPGPRESPLISLDY--
 Mus_musculus TSLSPPEREQQLAFPDFLPQSYPTGQNEAHLFH-
 QSQRGSCCIGGSTGHKDNVLALQDY--
 Rattus TSLSQPEREQQLAFPDLRPQSYPTGQNEAHLFH-
 QSQRGSCCIGGSTGHKENVLALHDY--
 Cavia TRLYSPERSHLAFPDVMPQSYPLGQTESHLFH-
 PNPSSCCVGAAGPHKNPLALQDY--
 Homo TRMNSPEREHSSFPNFIPPSYPSGQKEAHLFH-
 LSQRGSCCAGSSTGPKDNPLALQDY--
 Equus TRLN SPEGEHVAFPD SIPLSY PAGQKEAHLFH-
 LSQRSPCCVGGSIGPEDNPLALQDY--
 Ursus TRLN SPDGEHLAFPD LI PPSY PAGQKEAHV FH-
 LSQRGPCCAGGSTGHKDNALALQDY--
 Bos TRLN SPEGGHLAFPD LI PHYPGSQKETRLFH-
 LSQRGPCCAGGSIGPKDNPLALQDY--

TADHLCCAEDSPVTKEGLPAPLRS--

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Ornithorhynchus
LALPGYLPLDPLDYPPLDRPDYLPPAPRDYPPDTPNYSPLDTPDYPPHYPLAPQDYSS
Monodelphis
-----SP
Mus_musculus
-----TS
Rattus
-----TS
Cavia
-----TP
Homo
-----TP
Equus
-----TP
Ursus
-----TP
Bos
-----TL
Sus
-----TQ
Tursiops
-----TP
Allig_mississip
-----SL
Allig_sinensis
-----SL
Gharial
-----SL
Crocodilus_nilo
-----SL
Crocodilus_poro
-----SL
Aspidoscelis
-----AP
Shinisaurus
-----AP
Ophisaurus
-----AP
Anolis
-----AP
Eublepharis
-----VP
MournGekko

-----AS
Gekko_japon
-----AS
Python
-----AP
Boa_constrictor
-----AP
Vipera
-----AP
Protobothrops
-----AP
Crot_horrid
-----AP
Crot_mitch
-----AP
Thamnophis
-----AP
Cobra
-----AP
Pantherophis
-----AP
Pogona
-----AP

Ornithorhynchus PLGLSLWELQVGGPRSPG--
GSRSRHVQQAASPVGYPAIRRNGTEEA---PPTRREEPAP
Monodelphis PFGLVSGDDGERNPPTTE--
GIHMKHARHIIYSTDIQPNQRNSSEKN---LSEKGANPDP
Mus_musculus SYGLPPRKNQETSPPVHTE--
SSYIKYARPNVSPASILPSQRNISENK---LTAESPSP
Rattus SYGLPPRKTQEISPVHTE--
SSYTKYAKPNVSPASILPNQRNISENK---LTAESPSP
Cavia SYGLAPGENHNTNPTYTE--
SSHTTHTRPNVSPTSILPGQRNSSEKK---LPGESTKPST
Homo SYGLAPGENQDTSPLYTD--
GSHTKQTRDIISPTSILPGQRNSSEKR-----ESQN--P
Equus SFGLLPGENQDTSLLYME--
DSHTNHARDTISPTIIPPVEGNSSEKR---LPGESQNPSP
Ursus SFGPVPGETQDTSPLYTE--
DSHTKHARHTISPTSNLPDQRNSSEKR---LPGESQNPSP
Bos FFGLAPGENQDTSPLYTE--
DSHTKHERYTISPTSILPGQRNSSEKR---LPGESQNPSP
Sus SFGLAPGENPDTSIGYAE--
DSHIKYARQTVSPTSIVPGQRNSSEKI---LPGESQNPSP
Tursiops SFGLALGENQDTSPLYIE--
DSQTHVRHTISPTSILAGQRNSSEKR---LPGESQNPSP

Allig_mississip QLRPSTWE-HKP----PE--
GSHSKHARHVAYPAAIQSGQKNCSLRL---EKSPGENAEN
Allig_sinensis QLRPSTWE-HKP----PE--
GSHSKHARHVAYPAAIQSGQKNCSLRL---EKSPGENAEN
Gharial QLRPSTWE-HKP----PE--
GSHSKHARHVTPVAIHSGQKNCSLRL---EKSPEENAEN
Crocodilus_nilo QLRPSTWE-HKP----PE--
GSHSKHARHVTPAAIQSGQKNCSLRL---EKSPEENAEN
Crocodilus_poro QLRPSTWE-HKP----PE--
GSHSKHARHVTPAAIQSGQKNCSLRL---EKSPEENAEN
Aspidoscelis HFQLALWE-QKGSSTYPE--
VSHAKYARHAPHAGLQTSNRDNFLRTGEKNGNQGEKIDT
Shinisaurus QFRLASWE-HKGSSTYPE--GSHAKHARHAPYLPSTPTNH---
SLKTGKMLPNQREHLGA
Ophisaurus HFRLASWE-HKGSSTYPE--GSHAKHARHAPYPAGNQANH---
SLKTGKMOPNQREPLSA
Anolis QFRHALWA-AKESSTYPD--GSHANYVRHAHSPAGIQANN---
PLKNGG---REQEELGA
Eublepharis QFRQALWP-QRGSSPYPEADGSHPKQAGHTLYPSGMQS-----
SLKTEKSTPKQREDLGV
MournGekko QFRLASWE-QRGSSLYPEAKGDHIKQASHILYPSGMQS-----
SLKTDKSPPNQREN LGV
Gekko_japon QFRLASWE-QRGSSLYPEAKGDHIKQASHILYPSGMQS-----
SLKTDKSPPNQREN LGV
Python QFRLASWQ-QKRSPTYPE--
GSHASYARHPPYLAGIQSNHWNNLSLKFGLKSLPNHRENPGG
Boa_constrictor RFRLASWE-QKGSPTYPE--
GSHTLYARHPPYLAGVFNHWNNLSLKSGLSLPNHRENPGG
Vipera QFRAVSWE-QKSSPTYPE--
GSHALYARRPAYLAGIQSNLWNNLSLKT-----NHRENPGG
Protobothrops QFRAVSWE-QKSSPTYPE--
GSHALYARRPAYLAGIQSNIWNNLSLKS-----NQRENPGD
Crot_horrid QFRAVSWE-QKSSPTYPE--
GSHALYARHPAYLAGIQSNLWNNLSLKS-----NHREHPGD
Crot_mitch QFRAVSWE-QKSSPTYPE--
GSHALYARRPAYLAGIQSNLWNNLSLKS-----NHREHPGD
Thamnophis QFKLVSWE-QKNSPTYPE--
GSHALYARRPAYLAGIQSNHWNNNSFNS-----NHKENPDD
Cobra QFKLVSWE-QKSSPTYPE--
GSHALYARHPAYLAGIQSNHWNNLSLKS-----NQRENPGD
Pantherophis QFKLVSWE-QKNSPIIYPE--
GSHALHARRPAYLAGIQSNHWNNLSLKS-----NHREYPGD
Pogona QFRLAPWE-EKISAGYSE--GSHGKHARHAPSPAGIQSNY---
PFMVGK---KQKENLDT

Ornithorhynchus SRDGLAP-GRSPPCSLRPRASPRAGLAFPEAGL-

PPAKPAPCFKSRLRGDVSVPQILD
Monodelphis FRADTAMLKKSSPCSKRSPAGQTESVVPFSEADS-LQA-
NMPCRKSNLRGEGNNVLAKILG
Mus_musculus FGdgvptvrkntpysgknql-ETGIVAFSEASS-
SQPKNTPCLKSDLGGDRRDVVKQFFE
Rattus FGDDVPTVRKNTPNsgknql-ETGIIALSEASS-
SQPKNTACLKSDLGGDRRDVVKQFFE
Cavia LRDNVSSL-KNAPCSAKTQOGTGGVRSFPKASA-PQS-
NTLCLSNLDGGDGNsvleQIFE
Homo FRDDVSTLRRNTPCSIKNQLGQKEIMPFPEASS-
LQSKNTPCLKNDLGGDGNnileQVFE
Equus FGDDVSPLRRNIPCSIKNQLGQRGIMPIPEASS-
LQPKNTPCLKSDLGGDGNVLERIFE
Ursus FRDDVSTLRRNTPCSMKNQLSQRGIMPFPEATS-
LQSKNMPCLTSDLGGDGNVLEQIFE
Bos FRDDVSTLRRNTPCSINNQLSQRGIRPLPEASS-LQSKNIPCLKSDL-
EDGNHVLEQTL
Sus FKDDVSTLRRSTPCSVKSQLSQRGIMPLPEANS-
LQSKNTPCLTSDLGGDGNVLEQIFE
Tursiops FRDDMSTLKRNTPRSI-NQLGQRGIMPFPEASS-
LQSKNTPCLKSDLGGEG-NILEQIFE
Allig_mississip FEDGTRDQERDMPCSKNALGQNKK-QGSPKKG-
DPTRNPLYFESNTRGDGNSVFAQIFG
Allig_sinensis FEDGTRDQERDMPCSKNALGQNKK-QGSPKKG-
DPTRNPLYFESNTRGDGNSVFAQIFG
Gharial FEDGTRDQERDMPCSKNVLGQNKK-QGSPQKGP-
DPTRNPLYFESNTRGDGNSVFAQIFG
Crocodilus_nilo FEDGTQDQERDMPCSKNVLGQNKK-QGSPQKGP-
DPTRNPLYFESNTRGDGNSVFAQIFG
Crocodilus_poro FEDGTQDQERDMPCSKNVLGQNKK-QGSPQKGP-
DPTRNPLYFESNTRGDGNSVFAQIFG
Aspidoscelis LGEKIAGVEKNLPCSKTQLNQQEHEQINEAGL-
PLSDDAPCSGSNIRGDRHNVLEGILG
Shinisaurus FGEEVADLEKSPPCSNPQLRQKNDHEADYETGL-
PRPRNAPCYGSSTRGDGHNVLGWIVG
Ophisaurus FREEAAVLEKSPPCSNPQLRQENDHEADYESGL-
PPQRKVPCYGSSIRGDGHNVLGRIVG
Anolis FRVENAGSEKSLPCSNSHLSQDSKQEANLQRGL-
FKFRNMPCHGSNIRGDRHNPLAHLVG
Eublepharis
FEKDAATLEKAPPCSRSQLSQONEREVNYETGLAAPTRKPPCYGRSVRGDGHsIFEWI--
MournGekko FGEDVAGLEKAPPCSKSQLGQENGHEVHHGNGL-
APTRNTPCYGRSIRGDGHsILERII-
Gekko_japon FGEDVAGLEKAPPCSKSQLGQENGHEVHHGNGL-
APTRNTPCYGRSIRGDGHsILERII-
Python FGEEVADLEKSPPCSNSQLGQIRGHDTNYETGL-
FPSKSILCSRNSIRGDGHTVLAHIMG

Boa_constrictor FGEEIADLEKGPCCSKTQLGQVSDHDTTYETRL-
 FPSKNILCSRNSIRGDGHTVLAHIMG
 Vipera FEDEVADLGKSPPCSNSLLAQTSDHDTIYETGL-
 FPSKSIPCSKTSIRGDGHTVLAHIVE
 Protobothrops FEEKVADLGKSPPCSNSLLAQTSDHDTIYETGL-
 FPSKSILCSKNSIRGDGHTVLAHIVE
 Croc_horrid FEEEVADLGKSPPCSNSLLAQTSDHDTIHETGL-
 FPSKSILCSKNSIRGDGHTVLAHIVE
 Croc_mitch FEEEVADLGKSPPCSNSLLAQTSDHDTIHETGL-
 FPSKSILCSKNSIRGDGHTVLAHIVE
 Thamnophis FGEKVADLEMSPPCSNSLLGQTSDHDTIYETGL-
 FSSKGILCSKNSIRGDGHTVLAHIVE
 Cobra FGEEVADLEMSPPCSNSLLGQTSDHDTMYETGL-
 FPSKGILCSKNSIRGDGHSVLAHIVE
 Pantherophis FGEEVADLEMGPCCNSLLGLTS--DTIYETGL-
 FPSKGIRCSKNSIRGDGHTVLAHIVE
 Pogona FTEEAAGAQNLPCKSKLSQDHTHETNCETGL-
 PPSENTHDYGNLGRDRHSIPAAIMG

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Ornithorhynchus PDPPVAGNDGPAPGDLAVV---VPERDPGPVGIR----GDPEPGPE-
 AGAPGFQWVPCFG
 Monodelphis VNQFNARTSNLIPEEL--E---APEENLGPENIQSEGGGSEGRVKQ-
 KGVPNIQKVPCLH
 Mus_musculus GSQLSERTAGLTPEQLVIG---IPDKGSGPDSIQSEVQKKEGEMQQ-
 QRPPTIMKLPCFG
 Rattus GTQLGERTAGLTPEQLVIG---SPDKGSGPDGTHSEVQKSEGEMQQ-
 QRPPTIRKLPCFG
 Cavia GNHLSERTVNLTPPEQLFIG---TLNEGLKPPGIQKEMQGEEDDRPQ-
 QRPPSILQVPCFG
 Homo DNQLNERTVDLTPEQLVIG---TPDEGSNPEGIQSQVQENESERQQ-
 QRPSNILHLPCFG
 Equus GNQLNERTVDLTPEQLVID---IPDEGPKPEGIQSEVQKNEGERQQ-
 QRPPSILQLPCFG
 Ursus DNQFDERTADLTPEQLVIG---SPDEGPQPEGIQSEVQKNEDEGQQ-
 QRPSSILQLPCFG
 Bos GNQLNERPVDLTPPEQLVMD---TPDEGPKPEGIPSEVQKNGGKRQQ-
 QRPSTILKLPCFD
 Sus GNQLNERTVDLTPEQLVFG---TPDKEPRPEGIPNEMQGNESERQQ-
 QRQSSILQLPCFG
 Tursiops GNQLNERTVDLTPEQLVIG---TPDEGPKPEGIPSEVQKNEGER-Q-
 QRPSSILQLPCFG
 Allig_mississip LNQYNGRDAGDPDENHMTGPHDIPEEEPLPEGIKSATLGSKVDMKE--
 VAHEFKRIPCFG
 Allig_sinensis VNQYNGRDAGDPDENHMTGPHAIPEEEPLPEGIRSATLGSKVDMKE--
 VAHEFKRIPCFG

Gharial VNQYNGRDTGPDPENHMAGPHDIPEEGTLPEGIRSATLGSKADMKE--
 VAHEFKRIPCFG
 Crocodilus_nilo INQYNGRDAGPDPENHMAGPHDIPEEGTLPEGIRSATLGSKADMKE--
 VAHEFKRIPCFG
 Crocodilus_poro INQYNGRDAGPDPENHMAGPHDIPEEGTLPEGIRSATLGSKADMKE--
 VAHEFKRIPCFG
 Aspidoscelis SNQSKREIERAASMKL-----
 VSEDVSAPQGIRSVSLDVKDDRRNEHTTHGFKRIPCFG
 Shinisaurus ANQSKREFER-AALKL-----
 IPETFSPQOGIRSEALVSEVDRKEQHATLGFKRIPCFA
 Ophisaurus TNHAKRELER-APLKL-----
 IPETFPEPQGVRSALVSEVGGKEQQAELGFKRTPCFR
 Anolis TGQS---FGR-GTLNF-----LPEQFPQPHGIQSEALVSEDDGKE-
 YAALGAKRIPCFG
 Eublepharis -DPPKREQERAAPVNL-----
 IPEKGPPAQGIKSAALDTKGSRKQRPAVFGFKRIPCGLG
 MournGekko --QPKRDERAAAVKF-----
 VPQKGPPAHGIKSVAFDSEDSRKEQQAVLGFKRIPCCLL
 Gekko_japon --QPKRDERAAAVKF-----
 VPQKGPPAHGIKSVAFDSEDSRKEQQAVLGFKRIPCCLL
 Python VNQPKREFER-ASLRF-----
 PQPQGIRNEAIVGEIDRKEYHATHGFKRTPCFG
 Boa_constrictor VNQRKREFER-ATLRF-----
 PQPQIRNDVAVGEIDRKEYHGTHGFERTPCFG
 Vipera VNQPKREFER-ATLTF-----PQPQIRNEA-
 VGEIDRKEHRAIQGFGWTPCFG
 Protobothrops VNQPKREFEK-ATLTF-----PQPQIRNEA-
 IGEIDRKEHRATQGFGWTPCFG
 Croc_horrid VNQPKREFEK-AALTF-----PQPQIRNEA-
 IGEIDRKEHRATQGFGWTPCFG
 Croc_mitch VNQPKREFEK-AALTF-----PQPQIRNEA-
 IGEIDRKEHRATQGFGWTPCFG
 Thamnophis VNQPKREFER-ATVRF-----PQPQIRNEA-
 VGEIDRKEHRATQGFGWTPCFG
 Cobra VNQPKREFER-ATLKF-----PQPQIRNEA-
 VSDIDRKHATQGFGWTPCFG
 Pantherophis VNQPKREFER-AALRF-----PQPQIRNEA-
 VSETDRKEHRATQGFGWTPCFG
 Pogona ESESRRFRQ-AAVKL-----
 VPEKSPEPQIRSQALASEDGRKEQHAALAIKRIPCFA

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Ornithorhynchus SETQNHYLAWTGAPPGNEKPDPSEPVS--TAPAETLDA-
 VSGLPTGVPSEGPSL-PR SSE
 Monodelphis SKLKDHLLSSTGAPLGKRRPGLSTGEP--
 AMVSAQPSSTLTGLTAREQLGGTNIDPLVAS

Mus_musculus SN-SKFHSSTTGPPINRRPTLLNGAL--STPTESPNT-
LVGLATREQLKSINVDKLNAD
Rattus SKLAKLHSSSTGPPTNNGGPSLPNGAL--STPTESPDT-
LVGLATREQFKSINVDQLNAD
Cavia SOLTQLHSSSTGTPSSRRPGPSGGDL--TKPTENPNT-
FVGFATGEPFRSINADQLSVA
Homo SKLAKHSSSTGTPSSDGRQSPFDGDS--ITPTENPNT-
LVELATEEQFKSINVDPLDAD
Equus SNLAKYHSSGAGTPSSIGRPGLFDGDP--IMPTEIPNS-
LAGLATGAEFQISVDPLNAD
Ursus SEIAKYHSSSTGTPSSIGRQGFDEDP--IMPTEPNS-
LSRLATGAEFQSINVDPLNAD
Bos SKLTKYYTSSTGTPSSLGRQGSFDGDP--IMPTEIPNS-
LAELATGAQFQNINVDPLNAD
Sus SKLANYHTSSIGTPSSLGRQDSFDGDP--IMPTEPNS-
LAGLATGAQFQNINVDPLNED
Tursiops SKLTKYHTSSTGTPSSIGRQGSFDGDP--ITPTEIPNS-
LAELATRAQFQNINVDPLNAD
Allig_mississip SWLRQ-HLSSTGVPPGVRKQESIYGDQLLVIPTRKPNL---
QLETEAKIPSAEP-----
Allig_sinensis SWLRQ-HLSSTGVPPGVRKQESIYGDQLLVIPTRKPNL---
LLETEAKIPSAKP-----
Gharial SWLRQ-HLSSTGVPPGVRKQESVYGDQLPVIPTKPNL---
QLETEAKIPSAEP-----
Crocodilus_nilo TWLRQ-HLSSTGVPPGVRKQESIYGDQLLVISTRKPNL---
QLETEAKIPSAEP-----
Crocodilus_poro TWLRQ-HLSSTGVPPGVRKQESIYGDQLLVISTRKPNL---
QLETEAKIPSAEP-----
Aspidoscelis NWLKQ-YLPSTGAPSGDQONNLFNAES--PTPTGKLNI---
MPPEPQPISSSTPFHNTQE
Shinisaurus SWLKQ-
YLSSTGAPPGDQQHDLF-----
Ophisaurus SWLKQ-YLSSTGAPSGDQQHDLFYGED--PVPTGKPI---
LHPEPQPISSSTNPSHNVEE
Anolis SWLKQ-YLSNTEVPSGDQQRDPFYGEN--PVPTERPNS---
IPPKPEPISSSFLSNGVEE
Eublepharis NQLQQ-YLSSTGAPSSGKQQDLFYAEN--PMLIGKSFI---
ILPEPHPLTSTNPSYDTEE
MournGekko NRLKQ-FLSSTGAPSGDTQQDLFYAEN--PALIGQSYV---
ILPEPHPLSSTDPSYDTEE
Gekko_japon NRLKQ-FLSSTGAPSGDTQQDLFYAEN--PALIGQSYV---
ILPEPHPLSSTDPSYDTEE
Python SWLKQ-HISSTGTPLGDQPSGVFYAEH--SMHAGKPI----
MLPEPQPISSSTVPSHSIGE
Boa_constrictor NWLKQ-HISSTGTPLGDQLSDVFYAEN--SMHAGKPIT---
MLPEPQPISSSTVPSHDI-E
Vipera SWLKQ-HIFSTGDPLVDQSSDIFYAEN--SMQAGKPI----

MLPEPQPMTSTVLSQDVGE
 Protobothrops SWLKQ-HIFSTGDPLVDQSSDIFYAEN--SMQPGKPI----
 MLPEPQPMTSTVLAQDVGE
 Croc_horrid SWLKQ-HIFSTGDPLVDQSFDFIFYAEN--SMQAGKPI----
 MLPEPQPMTSTVLAQDVRE
 Croc_mitch SWLKQ-HIFSTGDPLVDQSSDIFYAEN--SMQAGKPI----
 MLPEPQPMTSTVLAQDVGE
 Thamnophis SWLKQ-HISSTGDPLVDQPSDIFYLEN--SMHAGKPI----
 MLPEPQPMSSTVPSQDGGGE
 Cobra SWLKQ-HISSTRDPLVDQPSDVFYLEN--SMHAGKPI----
 MLPEPQPMSSTAPSQDVGE
 Pantherophis NWLKE-HISSTGDPLVDQPSDVFYLEN--SMHAGKPI----
 MLPEPQPVSSTVPSQDGGGE
 Pogona SWLKQ-YLSSTGAPSGDQQHNLFHGET--PVPTSRPND---
 MPPEKPISSSTNPSHDDRE

. . *

Ornithorhynchus -LSPPFKTLQWEVADGPEQQGADCSSLQ-
 Monodelphis --EPPLSFP--SLSIPKNAEFQDCLLLHS-
 Mus_musculus -EHTTLESF--Q-GTSPQDQ--GCLLLQA-
 Rattus -GHTTLESF--Q-DTSQQDQAHGCLLLQA-
 Cavia -GHTPFESF--QRGTDPDQDIQDCLLIQV-
 Homo -EHSPFEFL--QRGTNVQDQVQDCLLLQA-
 Equus -EHTSFDYL--QIGTDPEDQVQDCLLLQA-
 Ursus -EHTPFDSL--QLGTNPQDHVQDCLLLQA-
 Bos -DHTPFDP--QVGTNPQDQVQDCLLLQA-
 Sus -EHTPFDSL--QIGTNPQDQVQDCLLLQA-
 Tursiops -EHTLFDL--QVGTNPQDQVQDCLLLQA-
 Allig_mississip --PNGVSSLTGGMANDSEERRPDCLLLQ-
 Allig_sinensis --PNGVSSLTGGMANDSEERRPDCLLLQ-
 Gharial --PNGVSSLTGGMANDSEERRPDCLLLQ-
 Crocodilus_nilo --PNGVSSLTGGMANDLEERRPDCLLLQ-
 Crocodilus_poro --PNGVSSLTGGMANDSEERRPDCLLLQ-
 Aspidoscelis -NPVKSSSPGRELVDQANESVPCFLLQNK
 Shinisaurus -----
 Ophisaurus -NLLDFSSPGEELAEQPNEWIPDCLLLQNK
 Anolis -KPLKINAPEEAWAKLATQSTPDCLLLQKK
 Eublepharis -KPLTPSALGEDLADQPKERTPDCLLLQK-
 MournGekko -KPLTPSSLGEDLADQPNERTSDCLLLQK-
 Gekko_japon -KPLTPSSLGEDLADQPNERTSDCLLLQK-
 Python -DHIKFSTP-EELVGQPNERTTDCLLLRNK
 Boa_constrictor -DQLKFSSP-EELVGQPNERTIDSLLLQNK
 Vipera -DQLKLTSP-EEQVGQPNERTTDCLLLHE-
 Protobothrops -DQLKLTSP-EEQVGQPNERTTDCLLLHE-
 Croc_horrid -DQLKLTSP-EEQVGQPNERTTDCLLLHE-
 Croc_mitch -DQLKLTSP-EEQVGQPNERTTDCLLLHE-
 Thamnophis -DQLKLTSP-GEQVGQPNERTIDCLVLQNE

Cobra -DQLKLTSP-EEQMGQPNERTTDCLLFQNE
Pantherophis -DQLKLTSP-EEQVGQPNERTTDCLLLHE-
Pogona GKHLKFGSPGEEWVERPNETTPDCLLLQKK

Mammals+Reptiles-ENAM-CDS-ALN.txt

PAL2NAL output

CLUSTAL W multiple sequence alignment

Ornithorhynchus
ATGGGGAGAGGAACTGAAGCCAATGGTGGCACTGAAACGCAGAGATTCCAGGTCCAAACT
Monodelphis
ATG-----
Mus_musculus
ATG-----
Rattus
ATG-----
Cavia
ATG-----
Homo
ATG-----
Equus
ATG-----
Ursus
ATG-----
Bos

Sus

Tursiops
ATG-----
Allig_mississip

Allig_sinensis

Gharial

Crocodylus_nilo

Crocodylus_poro

Aspidoscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MournGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

CCCCAGGGCACCAGCGGCATGGGAGAGATTTCGAGGGCAGATTCTCAAGTTGAAGGAGGCG

Monodelphis

Mus_musculus

Rattus

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Allig_mississip

Allig_sinensis

Gharial

Crocodylus_nilo

Crocodylus_poro

Aspiloscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

Mourngekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

ACGATAAACCACTGCCAGATTTTGAAGAAGAAAACCTCTATGGATCCGCTCCCGGAAAGAC

Monodelphis -----

TTGCTGCATCAGGGCAACCAC---

Mus_musculus -----

TTGCTGCTTCAGTGCAGAAAT---

Rattus -----

TTGCTGCTTCAGTGCAGAAAT---

Cavia -----

CGACTGCTTCACTGCAGAAAG---

Homo -----

TTGGTGCTTCGGTGCAGGCTT---

Equus -----

TTGCTGCTTCCGTGCAGACAT---

Ursus -----

TTGCTGCTTCAGTACAGGCAT---

Bos -----

ATGCTGCTGCAGTGTAGGCAT---

Sus -----

ATGCTGCTTTCGTGCAGGCAT---

Tursiops -----

TTGCTGCTGCACTGCAGGCAT---

Allig_mississip

Allig_sinensis

Gharial

Crocodylus_nilo

Crocodylus_poro

Aspidoscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MournGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

TGCAAGTGGAGTTTCCATCACTTTCAGAAGTGGGTCCAGGTTCTCTTGGGCTTGGGAAAT

Monodelphis

Mus_musculus

Rattus

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Allig_mississip

Allig_sinensis

Gharial

Crocodylus_nilo

Crocodylus_poro

Aspidoscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MournGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

CGCCCCTCCGGGTTGATGGTCAACCTTGGCAAAGCCAGGGTAGCCAGCTCGGCCACTGGA
Monodelphis
-----AGA
Mus_musculus
-----CCG
Rattus
-----ACA
Cavia
-----GGG
Homo
-----GGA
Equus
-----GGA
Ursus
-----GGA
Bos
-----GAA
Sus
-----GGA
Tursiops
-----GAA
Allig_mississip

Allig_sinensis

Gharial

Crocodilus_nilo

Crocodilus_poro

Aspidoscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MournGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

ACTGGCAGTCCCACCGCCCCTCTACCCTGGCACCGGATATATGCCTTTGACTTTGGCTCC

Monodelphis

ACATTTTCTCCTGAA

Mus_musculus

ACTTCTCCTCCAAAG

Rattus

GCTTCTCCTCCAAAG

Cavia

GCCTCTTTTCCTAAA

Homo

ACCTCTTTTCCTAAA

Equus

ACCTCTTTTCCTAAG

Ursus

GCCTCTCTCCTAAG

Bos

GCCTCTTCTCCTAAG

Sus

GCCTCTTCTCCTAAG

Tursiops

GCTTCGTCTCCTAAG

Allig_mississip

Allig_sinensis

Gharial

Crocodylus_nilo

Crocodylus_poro

Aspidoscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MournGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

TACATCTTATTAGAACTCACCAGATATTGGCAAGCTGTGCACCAGGAGTTTAAGTTCAGT

Monodelphis -----

CTAGTTGACGTG-----

Mus_musculus -----

CCATGTGGCCTG-----

Rattus -----

CCATGTGACATG-----

Cavia -----
CTGTATAACTTG-----
Homo -----
CTAGATAACTTG-----
Equus -----
CTAGATGACTTG-----
Ursus -----
CTAGATAACTTG-----
Bos -----
CTAGATTACTTG-----
Sus -----
CTAGATAACTTG-----
Tursiops -----
CTAGATAACCTG-----
Allig_mississip

Allig_sinensis

Gharial

Crocodilus_nilo

Crocodilus_poro

Aspidoscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MournGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus
GGGGAAGACAAGCATCTAAATACAGTTCAGATAAGGGAAGCAAATGAGTACAAGGATGTG
Monodelphis

Mus_musculus

Rattus

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Allig_mississip

Allig_sinensis

Gharial

Crocodylus_nilo

Crocodylus_poro

Aspidoscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MournGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

TACATTTGTGCTGAGGGGGTGGGGATAGCGAGGGGGAAGATGAAGAGTTTCCTGTTATTC

Monodelphis -----

GTCCCAAGGGGAAAGATGAAGACTCTCCTGATGTTT

Mus_musculus -----

GTACCAAATGTAAAGATGAGT---CTCCTTGTTTTTTC

Rattus -----

GTAAAGATGAGT---CTCCTTGTTTTTTC

Cavia -----

GTACCAAATGGAAAAATGAAGATGCTCTTGTTATTC

Homo -----

GTACCAAAGGCAAAATGAAGATTCTCCTGGTCTTT

Equus -----

GTACCAAGTGGAAAAATGAAGATTCTCCTGGTCTTT

Ursus -----

GTACCAAGTGGA AAAATGAAGATTCTCCTGGTCTTT
Bos -----
GTACCAAGTGGA AAAATGAAGATTCTCCTGGTCTTT
Sus -----
GTACCAAGTGGA AAAATGAAGATTCTCCTGGTCTTT
Tursiops -----
GTACCAAGTGGA AAAATGAAGAGTGCCTGGTCTTT
Allig_mississip -----
ATGTTCCCTCCAGTTC
Allig_sinensis -----
ATGTTCCCTCCAGTTC
Gharial -----
ATGTTCCCTCCAGTTC
Crocodilus_nilo -----
ATGTTCCCTCCAGTTC
Crocodilus_poro -----
ATGTTCCCTCCAGTTC
Aspidoscelis -----
ATGAAGCTAATTCTGCTGTAT
Shinisaurus -----
NNNNNNNNNNNNNNNNNNNNNNNNNN
Ophisaurus -----
ATGAAGCTAATCCTCCTGTTT
Anolis -----
ATGAAGCAACTCCTCCTATAT
Eublepharis -----
ATGAAGATAATCGTCCTATGC
MournGekko -----
ATGAAGATAATCCTCATGTAC
Gekko_japon -----
ATGAAGATAATCCTCATGTAC
Python -----
ATGAAGTTAATCCTCCTATAT
Boa_constrictor -----
ATGAAGTTAATCCTCCTATAT
Vipera -----
ATGAAGTTAATCCTCCTATAT
Protobothrops -----
ATGAAGTTAATCCTCCTATAT
Crot_horrid -----
ATGAAGTTAATCCTCCTATAT
Crot_mitch -----
ATGAAGTTAATCCTCCTATAT
Thamnophis -----
ATGAAGTTAATCCTCCTATAT
Cobra -----
ATGAAGTTAATCCTCCTATAT

Pantherophis -----
 ATGAAGTTAATTCTGCTATAT
 Pogona -----
 ATGAAGCTCTTTGTTCTGTAT

 Ornithorhynchus TTAGGCTTGTTTGGAGCTTCCACTGCGATGCCG-----
 ATGCACATGCCCCGCATGCCT
 Monodelphis CTCAGTCTGTTTCCAGCTGTTCCATTGCCATGCCT-----
 ATGCAGATGCCTCGCATGGGC
 Mus_musculus
 CTGGGTCTGCTTGGTGTCTCTGCTGCCATGCCATTCCAGATGCCAATGCCCCGAATGCCT
 Rattus CTGGGTCTGCTTGGGGTCTCGGCTGCCATGCCA-----
 ATGCCAATGCCCCGAATGCCT
 Cavia CTAGGTCTGCTTGGTAATTCTGCTGCCATGCCA-----
 ATGTACATGCCCCGAATGCCT
 Homo CTAGGGCTTCTTGGTAATTCTGTTGCTATGCCA-----
 ATGCACATGCCCCGAATGCCT
 Equus CTAGGTCTGCTTGGCAATTCCGTTGCTATGCCA-----
 CTGCAAATGCCCCGAATACCT
 Ursus CTAGGTCTGCTTGGTAATTCTGTTGCTATGCCA-----
 ATGCAAATGCCCCGAATGCCT
 Bos
 CTAAGCCTGCTTGGTTATTCCATTGCTATGCCATTGCAAATGCATATGCCCCGAATACCT
 Sus CTAGGTCTGCTTTGCTATTCTGCTGCTATGCCA-----
 ATGCAAATGCCCCGAATGCCT
 Tursiops CTAGGTCTGCTTTGTTATTCCATAGCTATGCCA-----
 ATGCAAATGCCCCGAATGCCT
 Allig_mississip CTGTGCCTCTTTGGCATGTCTATAGCAGTGCCG-----
 ATGCGCTTGCCCCGTAAGGCT
 Allig_sinensis CTGTGCCTCTTTGGCATGTCTATAGCAGTGCCG-----
 ATGCGCTTGCCCCGTAAGGCT
 Gharial CTGTGCCTCTTTGGCATGTCTATAGCAGTGCCG-----
 ATGCGCTTGCCCCGTAAGGCC
 Crocodilus_nilo CTGTGCCTCTTTGGCATGTCTATAGCAGTGCCG-----
 ATGCGCTTGCCCCGTAAGGCC
 Crocodilus_poro CTGTGCCTCTTTGGCATGTCTATAGCAGTGCCG-----
 ATGCGCTTGCCCCGTAAGGCC
 Aspidoscelis GCCTGCCTTATGGGCTCATCCTGTGCTGCATTG-----
 CTGCGGAAGCCCCGTCAGGCA
 Shinisaurus NNN-----
 CTGCGCAAGCCCCGCAAGGCA
 Ophisaurus CTATGCCTCGTGGGCACATCTTGTGCAAGTGCCA-----
 CTGCGCAAACCCCGCAAGGCA
 Anolis CTCTGCCTGATAGGCACATCTTGGGCTGTGCGG-----
 TTGCGCAAACCCCGCAAGGCA
 Eublepharis CTGTGCCTTGTGAGCATAACTTGTGCAATACCG-----
 CTGCGCAAACCCCGCAAAGCA

MournGekko CTATGCCTTGTGGGCACATCTTGTGCAATACTG-----
CTGCGCAAACCCCGCAGAGCA
Gekko_japon CTATGCCTTGTGGGCACATCTTGTGCAATACTG-----
CTGCGCAAACCCCGCAGAGCA
Python CTATGCCTTGTAGGCATATCTTATGCTGGTCCA-----
CTGCGCAAACCACGCAGGGCA
Boa_constrictor CTATGCCTTGTAGGCATATCTTACGCTGGTCCG-----
CTGCGCAAACCACGCAAGGCA
Vipera TTATGCCTTGTAGGCATATCTTACGCTGGTCCG-----
CTGCGCAAACCACGCAGGGCA
Protobothrops TTATGCCTTGTGGGCATATCTTATGCTGGTCCG-----
CTGCGCAAACCACGCAGGGCA
Crot_horrid TTATGCCTTGTGGGCATATCTTATGCTGGTCCG-----
CTGCGCAAACCACGCAGGGCA
Crot_mitch TTATGCCTTGTGGGCATATCTTATGCTGGTCCG-----
CTGCGCAAACCACGCAGGGCA
Thamnophis CTATGCCTTGTAGGCATGTCTTATGCTGGTCCG-----
CTGCGTAAACCACGCAGGGCA
Cobra CTATGCCTTGTAGGCATATCTTATGCTAGTCCG-----
CTGCGCAAACCACGTAGGGCA
Pantherophis CTATGCCTTGTAGGCATGTCTTATGCTGGTCCG-----
CTACGCAAACCACGCAAGGCA
Pogona TTATGCCTCGTAGGCACATCATGTGCCATACCA-----
TTGCGCAAACGCCGTAAGGCA

Ornithorhynchus GGATTTGGCAGTAAAAGCGAAGAGATGATGCCGTAT---
GGTCAGTACAACCTTATGAAT
Monodelphis GGATTTGGCAGTAAAGAGTGAAGAGATGATGCGATAT---
GGACAGTACAGCTTCATGAAC
Mus_musculus GGATTTAGCAGTAAAAGTGAAGAGATGATGCGATAT---
AATCAATTCAACTTCATGAAT
Rattus GGATTTAGCAGTAAAAGTGAAGAGATGATGCGATAT---
AATCAATTCAATTTTATGAAT
Cavia GGATTTAGCAGCAAAGTGAAGAGATGATGCGCTAT---
GGCCAGTTCAACTATATGCAT
Homo GGATTTAGCAGTAAAAGTGAAGAGATGATGCGGTAT---
AATCAATTCAACTTTATGAAC
Equus GGATTTAGCAGTAAAAGTGAAGAGATGATGCGGTAC---
GGTCAATTCAACTTTATGAAC
Ursus GGATTTAGCAGTAAAAGTGAAGAGATGATGCGATAT---
GGTCAATTCAACTTTATGAAC
Bos GGATTTAGCAGTAAAAGTGAAGAGATGATGCGCTAT---
GGTCACTTCAACTTTATGAAC
Sus GGATTTAGCAGTAAAAGTGAAGAGATGATGCGCTAT---
GGTCACTTCAACTTTATGAAC
Tursiops GGATTTAGCAGTAAAAGTGAAGAGCAGATGCGCTAT---
GGTCACTTCAACTTTATGAAC

Allig_mississip GGATTTGGAAGCAAGAGTGAAGAGATGATGCAGTAT---
GGCCAATATGCCTACATGAAC
Allig_sinensis GGATTTGGAAGCAAGAGTGAAGAGATGATGCAGTAC---
GGCCAATATGCCTACATGAAC
Gharial GGATTTGGAAGCAAGAGTGAAGAGATGATGCAGTAT---
GGCCAATATGCCTACATGAAC
Crocodilus_nilo GGATTTGGAAGCAAGAGTGAAGAGATGATGCAGTAT---
GGCCAATATGCCTACATGAAC
Crocodilus_poro GGATTTGGAAGCAAGAGTGAAGAGATGATGCAGTAT---
GGCCAATATGCCTACATGAAC
Aspidoscelis
GGATTTGGAAGTAAGAGTGAAGAAATGATGCAGTTTGGTGGTCCATTTGGCTACCTGAAT
Shinisaurus GGATTTGGAAGTAAGAGTGAAGAAATGATGCAGTTT---
GGTCCTTATGGCTATATAAAT
Ophisaurus GGATTTGGAAGTAAAAGTGAAGAAATGATGCAGTTT---
GGCCCATACAGCTATATGAAC
Anolis GGATTTGGAAGTAAGAGTGAAGAAATGATGCAGTAT---
GGTCCATTTGGCTACCTAAAC
Eublepharis GGATTTGGGAGCAAGAGTGAAGAAATGATGCAGTTT---
GGTCCGTATTCATATATGAAC
MournGekko GGATTTGGGAGCAAGAGTGAAGAAATGATGCAGTTT---
GGTCCATATGCTTATATGAAC
Gekko_japon GGATTTGGGAGCAAGAGTGAAGAAATGATGCAGTTT---
GGTCCATATGCTTATATGAAC
Python GGATATGGAAGCAAAAAGTGAAGAAATGACGCAGTTT---
GGTCCATATGGTTATATACAG
Boa_constrictor GGATATGGAAGCGAAAGCGAAGAAATGATGCAATTT---
AGTCCATATGGCTATATACAT
Vipera GGATATGGAAGCAAAAAGTGAAGAAATGATGCAGTTT---
GGTCCATATGGCTACATAAAT
Protobothrops GGATATGGAAGCAAAAAGTGAAGAAATGATGCAGTTT---
GGTCCATATGGCTATATAAAT
Crot_horrid GGATATGGAAGCAAAAAGTGAAGAAATGATGCAGTTT---
GGTCCATATGGCTATATAAAT
Crot_mitch GGATATGGAAGCAAAAAGTGAAGAAATGATGCAGTTT---
GGTCCATATGGCTATATAAAT
Thamnophis GGATACGGAAGCAAAAAGTGAAGAAATGATGCAGTTT---
GGTCCATATGGCAATATTAAT
Cobra GGATATGGAAGCAAAAAGTGAAGAAATGATGCAGTTT---
GGTCCATATGGTTATATAAAT
Pantherophis GGATATGGAAGCAAAAAGTGAAGAAATGATGCAGTTT---
GGTCCATATGGCTATATAAAT
Pogona GGATTTGGAAGCAAGAGTGAAGAAATGATGCCATTT---
GGTGCATATGGCTTTCTAAAC

Ornithorhynchus TCACCACACATGGCACAGTTG---GGCCCCCTG-----
TATGGTTACGGCTTG-----

Monodelphis ATGCCACACATGGCACACCTG---GGTCCTCTG-----
 TATGGATATAATATA-----
 Mus_musculus GCCCCACCAATGATGCCTATG---GGCCA-----
 TATGGAAATGGTATGCCAATG
 Rattus GCCCCACCAATGATGCATATG---GGCCA-----
 TGGCAAACGGTTTGCCGATG
 Cavia CCCCCACCTATGGCACCTATG---
 GGCCCTATGGGCCCTTACGGAAATGGTTAC-----
 Homo GGCCACATATGGCACACCTG---GGGCCCTTC-----
 TTTGGAAACGGTCTC-----
 Equus TCACCACATATGGCACAACCTG---GGCCCTATG-----
 TATGGAAATGGCATG-----
 Ursus TCCCCACATATGGCACAGCTG---GGCCCTTG-----
 TACGGGAATGGTATG-----
 Bos TTCCCGCATTTGGCACACCTG---AGTCCCTTT-----
 TATGGAAATGGTATA-----
 Sus GCCCCACATATGGCACACCTG---GGCACCTTG-----
 TATGGAAATGGTATG-----
 Tursiops TCCCCACAGATGGTACACCTG---GGTCCCTTG-----
 TATGGAAATGGTATG-----
 Allig_mississip TCACCCGCCATG-----AATCCCTTT-----
 TATGGCTATGGCTCC-----
 Allig_sinensis TCGCCCGCCATG-----AATCCCTTT-----
 TATGGCTATGGCTCC-----
 Gharial TCGCCCGCCATG-----AATCCCTTT-----
 TATGGCTATGGCTCC-----
 Crocodilus_nilo TCGCCCGCCATG-----AATCCCTTT-----
 TATGGCTATGGCTCC-----
 Crocodilus_poro TCGCCCGCTATG-----AATCCCTTT-----
 TATGGCTATGGCTCC-----
 Aspidoscelis TCCCCACACCTGGCTCACTTGGCAGCCTCCTTA-----
 TACGGTTTCCGTTCA-----
 Shinisaurus TCACCACAATTGGCA-----GTTCTTTG-----
 TATGGCTACCGTGCA-----
 Ophisaurus TCACCACAAGTACTCAGCTGGCAGCTTCTTTA-----
 TATGGCTACCGTGCA-----
 Anolis TCACCTCAATTGACTCAGTTGGCAGCTTCCTTG-----
 TATGGCTATCGCTCA-----
 Eublepharis TCACCACAATTGGCACCTTTG-----TTA-----
 TATGGCTACCGTCCG-----
 MournGekko TCACCACAATTGTCACCTTTC-----TTA-----
 TACGGCTATCGCCA-----
 Gekko_japon TCACCACAATTGTCACCTTTC-----TTA-----
 TACGGCTATCGCCA-----
 Python TCACCACAAGTCACA-----GGTCCCTTT-----
 TATGGCTACCATTTCA-----
 Boa_constrictor TCACCACAGTTGCA-----GGTCCCTTT-----

TATGGCTACCATTCA-----
Vipera TCACCACAAGTCGCT-----GGTTCCTTT-----
TATGGC-----
Protobothrops TCACCACAAGTTGCG-----GGTTCCTTT-----
TATGGCTACCCTTCA-----
Crot_horrid TCACCACAAGTTGCT-----GGTTCCTTT-----
TATGGCTACCCTTCA-----
Crot_mitch TCACCACAAGTTGCT-----GGTTCCTTT-----
TATGGCTACCCTTCA-----
Thamnophis TTACCACAAATTGCT-----GGTTCCTTT-----
TATGGCTACCATTCA-----
Cobra TCACCACAAATTGCT-----GGTTCCTTT-----
TATGGCTACCATTTCG-----
Pantherophis TCACCACAAATTGCT-----GGTTCCTTT-----
TATGGCTATCATTCA-----
Pogona TCACCACAACCTTTCACAGCTCGCAGCATCCTTA-----
TATGGCTACCGTCCA-----

Ornithorhynchus -----CAGCTC---CCCCAGTTCTTCCAACCACCCCAGATG---
CCTCCCTGGCCCCAG
Monodelphis -----CGGCTC---CCTCAGCAGTTTCCACAGATCCAGATG---
CCAGTGTGGCCCCAG
Mus_musculus CCGCCACACATG---CCTCCACAGTACCCTCCATACCAGATG---
CCCATGTGGCCTCCA
Rattus CCTCCGCACATG---CCTCCGCAGTACCCTCCATACCAGATG---
CCCATGTGGCCTCCG
Cavia -----CAAATT---
CCTCCGCCTTACCCACAGTACCCAATGCCCCCATGTGGCCCCAT
Homo -----CCTCAGCAATTTCCACAGTACCAGATG---
CCCATGTGGCCTCAG
Equus -----CAACTCCCCCTCAGCTCTTCCCGCAGTACCAGATG---
CCCATGTGGCCACAG
Ursus -----CCTCCGGTCTTCCCACAGTACCAGATG---
CCCATGTGGCCTCAA
Bos -----CAGCTC---CCTCAGCTCTTCCCACAGTACCAGATG---
CCCATGTGGCCTCAG
Sus -----CAGCTC---CCTCAGTTCTTCCCACAGTATCAGATG---
CCTATGTGGCCTCAG
Tursiops -----CAGCTC---CCTCAGCTCTTCCCTGCCGTACCAGATG---
CCCATGTGGCCTCAG
Allig_mississip -----AGCTAC---CCACAGATCTTCCAGCAGCAG-----
CCAGTATGGCCTCAG
Allig_sinensis -----AGCTAC---CCACAGGTCTTCCAGCAGCAG-----
CCAGTATGGCCTCAG
Gharial -----AGCTAC---CCACAGGTCTTCCAGCAGCAG-----
CCAGTATGGCCTCAG
Crocodylus_nilo -----AGCTAC---CCACAGGTCTTCCAGCAGCAG-----

CCAGTATGGCCTCAG
 Crocodilus_poro -----AGCTAC---CCACAGGTCTTCCAGCAGCAG-----
 CCAGTATGGCCT---
 Aspidoscelis -----CGGCAA---
 CCACCGCTGTTCCCTCAG-----CTACCTCAG
 Shinisaurus -----AGTTAC---CCGCAGATGTTCTCCAGCAG-----
 CCTATATCGCCTCTA
 Ophisaurus -----GGTTAC---CCACAGATGTTCCCCAGCAG-----
 CCTGGATCGCCTCTG
 Anolis -----GGTTTC---CCACAGATGGTCCCTCAGCAG-----
 CCTACATTTCCCCTT
 Eublepharis -----AGCTAC---
 CCGCAACTGTTCCCTCAG-----CCTCGG
 MournGekko -----AGTTAC---
 CCACAGTTGTTCCCTCAG-----CCTCTG
 Gekko_japon -----AGTTAC---
 CCACAGTTGTTCCCTCAG-----CCTCTG
 Python -----AGTTAT---CCACAGATATCCCCAAGTGG-----
 CCTATATTGCCTCTA
 Boa_constrictor -----AGTTAC---CCACAGATGTTCTCCAGTGG-----
 CCTATATTGCCTCTA
 Vipera -----TAC---CCACAGATGTTTTCCAGTGG-----
 CCTATATTGCCTCTG
 Protobothrops -----GGTTAC---CCACAGATGTTTTCCAGTGG-----
 CCTACATTGCCTCTG
 Croc_horrid -----GGTTAC---CCACAGATGTTTTCCAGTGG-----
 CCTATATTGCCTCTG
 Croc_mitch -----GGTTAC---CCACAGATGTTTTCCAGTGG-----
 CCTATATTGCCTCTG
 Thamnophis -----AATTAC---CCACAGATGTTGCCCCAGTGG-----
 CCTGTGTTGCCACTG
 Cobra -----AAC-----CCACAGATGTTCTCCAGTGG-----
 CCTATATTGCCTCTG
 Pantherophis -----AATTAC---CCACAGATGTTCCCCAGTGG-----
 CCTGTATTGCCACTG
 Pogona -----AGTTAC---CTACAGCTGTTCCCTCAGCAG-----
 TCTATGCCACCTTTG

Ornithorhynchus CCTCCCCGAACGGGTGGCCAGCC---
 CAGAACCCGGGGCCACCACAAGGAGGGAAGCCC
 Monodelphis CCACCGCAAATGCATGGCTCCCC---AGAATCCCATGC---
 CACCGAACTACCAAGAC
 Mus_musculus CCAGTACCCAATGGATGG-----CAGCAA-----
 CCCCCAATGCCCAATTTT
 Rattus CCAGTCCCCAATGGATGG-----CAGCAA-----
 CCCCCAATGCCCAATTTT
 Cavia CCACTACCCAGTGGGTGG-----CAGAAC-----

CCCCCAGTACCCCAACAC
Homo CCACCACCCAACACATGGCATCCA---CGGAAA-----
TCCTCAGCACCCAAACGT
Equus CCACCAGCCATCATGGGGCGCCA---AAGAAATCATCT---
CCCTCAACACAAAAACCT
Ursus CCGCCACCCAACATGGGCCACCTA---
CAGAAATCCTCACCTCCTTCAGCACCCAAACGC
Bos CCACCACCCAACAAGAAAAGCCA---CAGAAG-----
CCTTCATCTCCCGCAGCA
Sus CCACCACCCAACAAGAAGCACCCA---CAGAAA-----
CCTTCAGCATCCAAACAG
Tursiops CCACCACCCAACAAGAAGCGCCA---
CAGAAACCTTCATCTCCCTCAGCACCCAAACAC
Allig_mississip CAGCAGCTCTACTTGTGGCAGCAA---
CAGAAACCAGTACAACCCCCTGCCATTCAGCCC
Allig_sinensis CAGCAGCTCTACTTGTGGCAGCAA---
CAGAAACCAGTACAACCCCCTGCCATTCAGCCC
Gharial CAGCAGCTCTACTTGTGGCAGCAA---
CAGAAACCAGTACAACCCCCTGCAATTCAGCCC
Crocodilus_nilo CAGCAGCTCTACTTATGGCAGCAA---
CAGAAACCAGTACAACCCCCTGCAATTCAGCCC
Crocodilus_poro CAGCAGCTCTACTTGTGGCAGCAA---
CAGAAACCAGTACAACCCCCTGCAATTCAGCCC
Aspidoscelis CGGCAATTTCTCATGTGGCAGCAA---
CAGACTCCAGGTCACCAAGCTGCCCCGTTTGCCA
Shinisaurus CAGAGATTTTCTCTGGCAGCCG---
CAGACACCAGTACATCAAGCTGCCCCGCTGCC
Ophisaurus CAGGGGTTTTACCTCTGGCAGCCA---
CAGACACCAGTACATCAAGCCGCCCCGACTGCC
Anolis CAGAGGTTTTACCTCTGGCCACAA---
CAGATGCCAGTTCACCAGTCTGCTCGGCCTCCC
Eublepharis CAGAGATTTTACATCTGGCCGCAA---
CAAACACCAGCACATCAAGCTGCCAGGCTGCC
MournGekko CAAAGATTTTACTTATGGCCACAA---
CAAACCCAGTACATCAAGCCGCTAGGCTGCC
Gekko_japon CAAAGATTTTACTTATGGCCACAA---
CAAACCCAGTACATCAAGCCGCTAGGCTGCC
Python
CAGAGATTTTTCATTTGGCCGCAACCAGCACCACCCTCACATCAAGCAGCTAAGCTTCCC
Boa_constrictor
CAGAGATTTTTCCTTGGCCACAACCAGCATCGCCACACATCAGGCAGCTAGGCTCCCC
Vipera
CAGAGATTTTTCCTCTGGCCGCAATCAGCAACACCAGCACATCAAGCTTCTAGGCTTCCC
Protobothrops
CAGAGATTTTTCCTCTGGCCGCCATCAGCAACACCAGCACATCAAGCTTCTAGGCTTCCC
Crot_horrid
CAGAGATTTTTCCTCTGGCCGCAATCAACAACACCAGCACATCAAGCTTCTAGGCTTCCC

Crot_mitch
CAGAGATTTTTCCTCTGGCCGCAATCAACAACACCAGCACATCAAGCTTCTAGACTTCCC
Thamnophis
CAGAGATTTTTCCTCTGGCCGCAATCAGCCTCACCAGTACATCAAGCTTCTAGGCTTCCC
Cobra
CAGAGATTTTTCCTCTGGCCACAATCAGCCTCACCAACCCATCAAGCTTCTAGGCTTCCC
Pantherophis
CAGAGATTTTTCCTCTGGCCACAATCAGCCTCACCAGTACATCAAGCTTCTAGGCTTCCC
Pogona TCAAGACCATCCCTCTGGCAGCAG---
CAGATGCCGGCACATGAAGCCACCAGATTCCCT

Ornithorhynchus CAG---GCCAAGCCCGGTCAGAGCCAG-----
AACACCAAGCAGCCCAACCCT
Monodelphis CAC---AGAAAGGCAGGGGAGGGCCAG-----
GAAATCCCAAGGCCAGCCAG
Mus_musculus CCA---AGCAAGACTGATCAAACCCAG-----
GAGACCGCCAAACCCAACCAG
Rattus CCA---AGCAAAACTGAACAAACCCAG-----
GAGACCGCCAAACCCAACCAG
Cavia CAG---ACCAAGACGGATCAAACCCAG-----
GAGACTCAGAAGCCCAACCAG
Homo CAT---AACAAAGACTGATCAGACCCAA-----
GAAACCCAGAAACCCAACCAG
Equus CAG---AGCAAGACTGATCAAGCCCCA-----
GAGACCCCAATGCCCAACCAG
Ursus CAAAAGAGCAAGACTGATCAAATCCCA-----
GAGACTCAGAATCCCAACGAG
Bos CCC---AAACAGACAGATCAAGCCCCT-----
GAGACCCCGAGTCCCAACCAG
Sus CAG---AGCAAAACTGATCCAGCCCCA-----
GAGAGCCAGAAACCCAACCAG
Tursiops CAG---AGCAAGACTGATCAAGCCCCA-----
GAGACCCAGAAACCCAACCAG
Allig_mississip CAG---CAAAAACCTCGACAAGCTCAA-----
CGTTCGCCACAGCCCAGCAGG
Allig_sinensis CAG---CAAAAACCTCGACAAGCTCAA-----
CGTTCGCCACAGCCCAGCAGG
Gharial CAG---CAAAAACCTCGACAAGCTCAA-----
CGTTCCCCACAGCCCAGCAAG
Crocodilus_nilo CAG---CAAAAACCTCGACAAGCTCAA-----
CGTTCCCCACAGCCCAGCAGG
Crocodilus_poro CAG---CAAAAACCTCGACAAGCTCAA-----
CGTTCCCCACAGCCCAGCAGG
Aspidoscelis GAG---CGCAAACCTCACAAAGCTCCA-----
GGGGTTAAGCACCCAAATATG
Shinisaurus CAG---CAAAAGCCTCACCAAACCTCCA-----
GTGGCCAAACAGCCAAACAGC

Ophisaurus CAG---CTTAAGCCTCACCAAACCTCCA-----
 GTGGCCGAACAGCCAAAGAGC
 Anolis CAA---CAGAAGGCTCACCAAACCTCCA-----
 GTGCCAAAGAAACCAAACAGC
 Eublepharis CAG---CGTAAGCCACACCAAACCTCCA-----
 GCGGCCAGGCAGCCAATCCAA
 MournGekko CAG---CGCAAGCCACACCAAACGCTA-----
 GGGGCTAGGCAGCCCATCCAC
 Gekko_japon CAG---CGCAAGCCACACCAAACGCTA-----
 GGGGCTAGGCAGCCCATCCAC
 Python CAG---AAGAAGCCTCAACAAACCTCCA-----
 GGAACTAAGCAGTCCAACCAA
 Boa_constrictor CAG---CAGAAGCCTCCACAAACCTCCA-----
 GGAATTAAGCAGCCCAACCAA
 Vipera CAG---CAGAAGCCACAACAAATTCCA-----
 GGAACTAAACAGCCCAATCAA
 Protobothrops CAG---CAGAAGCCGCAACAAATTCCA-----
 AGAACTAAGCAGCCCAATCAA
 Crota_horrid CAG---CAGAAGCCGCAACAAATTCCA-----
 GGAACTAAGCAGCCCAATCAA
 Crota_mitch CAG---CAGAAGCCGCAACAAATTCCA-----
 GGAACTAAGCAGCCCAATCAA
 Thamnophis CAA---CAGAAGCTGCAACAAATTCCA-----
 GGAACTAAGCAGCCCAATCAA
 Cobra CAA---CAGAAGCCGCAACAAATTCCA-----
 AGAACTAAGCAGCCCAACCAA
 Pantherophis CAA---CAGAAGCCACAACAAATTCCA-----
 GAAACTAAGAAGCCCAACCAA
 Pogona TCA---
 CAGAATCCACACAGGTTGCCTCAGCAACCTTCAGCAGCCAGGAGGCCAAACAGC

Ornithorhynchus -----
 TCCAG-----CCC---
 Monodelphis -----
 CCACTG-----CCA---
 Mus_musculus -----
 ACCAAT-----CCA---
 Rattus -----
 ACCGAT-----CCA---
 Cavia -----
 ACTCAG-----CCC---
 Homo -----
 ACTCAG-----TCA---
 Equus -----
 ACTCAA-----CCA---
 Ursus -----
 CCTCAG-----CCA---

Bos -----
 CCTCAA-----CCA---
 Sus -----
 CCTCAA-----CCA---
 Tursiops -----
 CCTCAA-----CTA---
 Allig_mississip -----
 CCACAGCCCCAGCCACAGCCTCGACCACAACCCCGG
 Allig_sinensis -----
 CCACAGCCCCAGCCACAGCCTCGACCACAACCCCGG
 Gharial -----
 CCTCAGCCCCAGCCACAGCCTCGGCCACAACCCAG
 Crocodilus_nilo -----
 CCTCAGCCCCAGCCACAGCCTCGGCCACAACCCAG
 Crocodilus_poro -----
 CCTCAGCCCCAGCCACAGCCTCGGCCACAACCCAG
 Aspidoscelis -----
 AGGTCTCAGCCAAAGCCCCAGTACCA-----CCA---
 Shinisaurus -----
 AGGCCACAACCCAGGCCGCAGTTACTG-----CCA---
 Ophisaurus -----
 CGGCCGCAAGCAAGGCCGCAGTTACCA-----CCA---
 Anolis -----
 AGGCCACGACTTAAGCCACGGTTGGTA-----CCA---
 Eublepharis -----
 AGGCCGAAGCTGCAGCCACAGATGCCACAGCAGCCA---
 MournGekko
 AGGCCACAGCTGCCACAGCTGAGGCCACAGCTGAGGCCACAGATGCCGCAGCAGCCA---
 Gekko_japon
 AGGCCACAGCTGCCACAGCTGAGGCCACAGCTGAGGCCACAGATGCCGCAGCAGCCA---
 Python -----AGGCCACAG-----
 TTACCA-----CCA---
 Boa_constrictor -----AGGCCACAG-----
 TTACCA-----CCA---
 Vipera -----AGGCCACAG-----
 TTACCA-----CCA---
 Protobothrops -----AGGCCACAG-----
 TTACCA-----CCA---
 Croc_horrid -----AGGCCACAG-----
 TTACCA-----CCA---
 Croc_mitch -----AGGCCACAG-----
 TTACCA-----CCA---
 Thamnophis -----AGGCCACAG-----
 TTACCA-----CCA---
 Cobra -----AGGCCACAG-----
 TTACCA-----CCACAA
 Pantherophis -----AGGCCACAG-----

TTACCC-----CCA---
 Pogona -----
 AGGCCGCAACCCAAGCTACAGTTACCC-----CCA---

 Ornithorhynchus AAGAAACCACCGCAG-----CAGCAG---
 CCTCCAAAGCAGGCCGCAAGCAGCCGGCC
 Monodelphis ACGAAGCCACCAACA-----ACA-----
 CCAAAGCCACCTACAAAGCAGTCCCA
 Mus_musculus CAAGAGCCA-----CAG---
 CCACAAAAGCAGCCTTTAAAGGAACCACCA
 Rattus CAAGAGCCA-----CAA---
 CCACAAAAGCAGCCTTTAAAGGAACCACCA
 Cavia CAGAAACCA-----
 CCAGAAAAGCAGCCTTCCAATCAGCCACCA
 Homo AAAAAGCCA-----
 CCACAAAAGCGGCCTTTGAAGCAGCCATCA
 Equus AAAAAGTCA-----
 CCTCCAAAGCAGCCTGCCCAA-----
 Ursus AAAAAGCCA-----
 CCACCAAAGCAGCCTTTAAAGCAGCCACCG
 Bos ACCGACTCC-----
 CCACCAAACCAGCATTTAAAGCAGCCATCA
 Sus AAAACCCCC-----
 ACGCCAAAGCAGCCTTTAAACGAGCCGTCA
 Tursiops AAACAGCCC-----
 CTACCGGAGCATCCTTTAAAGCAGCCATCA
 Allig_mississip CTGCAGCCGTCCCAG-----CAACCA-----
 GCAAAGCCAAAGCCACAAAAGCCGCAA
 Allig_sinensis CCGCAGCCGTCCCAG-----CAACCA-----
 GCAAAGCCAAAGCCACAAAAGCCGCAA
 Gharial CTGCAGCCGTCCCAG-----CAGCCA-----
 GCAAAGCCAAAGCCGCAAAAGCCGCAA
 Crocodilus_nilo CCACAGCCGTCCCAG-----CAGCCA-----
 GCAAAGCCAAAGCCGCAAAAGCCACAA
 Crocodilus_poro CCACAGCCGTCCCAG-----CAGCCA-----
 GCAAAGCCAAAGCCGCAAAAGCCACAA
 Aspidoscelis ---CAGCCAAGGCGT-----CAGCAA-----
 CCGCAACCGAAAATGCCACAGCTACCA
 Shinisaurus CAGCAACCAAGATAT-----CAACAG-----
 CCGCAACCAAAAATGCAACAGCCACCA
 Ophisaurus CAGCAACCACGGTAT-----CAACAG-----
 CCGCAAGCAAAAATTCAACAGCCATCG
 Anolis CAACAACCAAGATAT-----CAACAG-----
 CCGCAACCCAAAATACATCTACCAGCT
 Eublepharis CACAAGCCAATACAA-----CAACAG-----
 CCACATCCAAAATACAGCAGCCACCG
 MournGekko CACAAGCCTATACAG-----CAACAG-----

CCACGCCCAAGAATACAGCTGCCACCA
 Gekko_japon CACAAGCTTATACAG-----CAACAG-----
 CCACGCCCAAGAATACAGCTGCCACCA
 Python CGGCAACCAAGACCT-----
 CAGCAGCCACCACCACCACCTCAA-----CCA
 Boa_constrictor CAGCAACCAAGATAT-----CAGCAG-----
 CCACAA-----CCA
 Vipera CAGCAACCAAGATAT-----CAGCAG-----
 CCACAACCTCTG-----CCA
 Protobothrops CAGCAACCAAGATAT-----CAGCAG-----
 CCACAACCTCTG-----CCA
 Croc_horrid CAGCAACCAAGATAT-----CAGCAG-----
 CCACAACCTCTG-----CCA
 Croc_mitch CAGCAACCAAGATAT-----CAGCAG-----
 CCACAACCTCTG-----CCA
 Thamnophis CAGCAACCAAGATAT-----CAGCAA-----
 CCACAACCTCTG-----CCA
 Cobra CAGCAACCAAGATAT-----CAGCAA-----
 CCACAACCTCTG-----CCA
 Pantherophis CAGCAACCAAGATAT-----CAGCAG-----
 CCACAACCTCTG-----CCA
 Pogona CAACAACCGACACATCAAGTTCAACAG-----
 CCCCAAATCAAAGTACAGCAACCACCC

Ornithorhynchus
 CCCGGGCCCTCC-----
 Monodelphis
 GAAGGCCCCCT-----
 Mus_musculus
 AATGAAGCAGCA-----
 Rattus
 AATGAAGCAGCA-----
 Cavia
 GAAAACCCGCC-----
 Homo
 CATAATCAACCT-----
 Equus -----
 ACT-----
 Ursus
 CCTACCCAGCA-----
 Bos
 ACCACCACAGCT-----
 Sus
 CCTACTCCAACCT-----
 Tursiops
 CCCACCCCAACT-----
 Allig_mississip AAGCAGCCCCC---

CCAACTCAGCCAGCACATCCTTCTCATTCTCAGCCCCCAGCACAG
 Allig_sinensis AAGCAGCCCCC---
 CCAACTCAGCCAGCACATCCTTCTCATTCTCAGCCCCCAGCACAG
 Gharial AAGCCGCCCCC---
 CCAACTCAGCCAGCACATCCCTCTCGTCCTCAGCCCCCAGCACAG
 Crocodilus_nilo AAGCCGCCCCC---
 CCAACTCAGCCAGCACATCCGTCTCGTCCTCAGCCCCCAGCACAG
 Crocodilus_poro AAGCTGCCCCC---
 CCAACTCAGCCAGCACATCCTTCTCGTCCTCAGCCCCCAGCACAG
 Aspidoscelis AAGTACCTCAA---AATACTAATCCTTCTCAG---ACT---
 CAGCAAGTACCAGTTCAG
 Shinisaurus AAACAGCCTCAG---AATATCAGACCTACTCAG---
 ACTCGCCAGCAAGTGCCAATTCAG
 Ophisaurus AAGCCGCTCAA---AATACCCGCCCTACTCAG---
 ACTCACCAGCAAGTGCCAGTTCAG
 Anolis AAACAGCCTCCAGTTGCTACCCATCCTTTCCAG---
 CCTCAGCCACAAACACCCGTTTCAG
 Eublepharis AAGAAGCTCCA---AGTACCAGCTCTCCTCAG---
 ATTCACCACCAGGGGCCGTGTAT
 MournGekko AAGAAGCTCCA---AATACCAGTCCTCCGCAG---
 ACTCCCATCAAGTGCCAGTGCAT
 Gekko_japon AAGAAGCTCCA---AATACCAGTCCTCCGCAG---
 ACTCCCATCAAGTGCCAGTGCAT
 Python AAACAGCCACAA---AAGACCAACCCATCTCAC---
 ACTCACCACAAGTGCCAATGCAG
 Boa_constrictor AAACAGCCACAA---AAAACCAACCCATCTCAG---
 ATTTACCCACAAGTGCCATCCAG
 Vipera AAACAGCCACAA---AAAACCAAGCCATCTCAG---
 ACTTACCCACAAGTGCCCTTTCNN
 Protobothrops AAACAGCCACAA---AAAACCAACCCATCTCAG---
 ACTTACCCACAAGTGCCCTTTCAG
 Crota_horrid AAACAGCCACAA---AAAACCAACCCATCTCAG---
 ACTTACCCACAAGTGCCCTTTCAG
 Crota_mitch AAACAGCCACAA---AAAACCAACCCATCTCAG---
 ACTTACCCACAAGTGCCCTTTCAG
 Thamnophis AAACAGCCACAA---AAGACCAACCCATCTCAG---
 ACGTACCCACAAGTGCCATTTTCAG
 Cobra AAACAGCCACAA---AAGACCAACCCATCTCAG---
 ACTTACCCACAAGTGCCATTTTCAG
 Pantherophis AAACAGCCACAA---AAGACCAACCCATCTCAG---
 ACGTACCCACAAGTGCCATTTTCAG
 Pogona AAACAGCCACAA---AAGACCAACCCATCTCAG---
 CCTCAACCACAAGTGCCCT-----

 Ornithorhynchus AAGCCCACG---GAAGAG-----
 ACCCGACAACCTCAAATGTACCCG
 Monodelphis CGGCCAAAA---GAAGAA-----

GATCAACAGCCTCCACAATACCCG
Mus_musculus CGGGCCAAA---GATGAC-----
GCCCAGCCACCTCAGCCATTCCCA
Rattus CGAGCCAAA---GATGAA-----
GCCCAGCCACCTCAGCCATTCCCA
Cavia AAGGACAAG---GCAGAT-----
GCCCAGCCGCCACAGCCATTCCCA
Homo CAGCCCGAA---GAGGAA-----
GCTCAACCCCCTCAGGCATTCCCA
Equus CAGGCCGAA---GAGGAA-----
GCCCAGCCACCTCAGGCATTCCCA
Ursus CAGCCAGAA---GAGGAA-----
ACCCAGCCACCTCAGGCATTCCCA
Bos CAGCCACAAGAGGAGGAA-----
ACCCAGACACCTCAGGCATTCCCA
Sus CAGCCTGAA---GAGGAA-----
ACCCAGACACCTCAGGCATTCCCA
Tursiops CAGCCCCAA---GAGGAA-----
ACCCAGACACCTCAGGCATTCCCA
Allig_mississip CCCCGCAATGAGGAAAA-----
CAGCTATCGCCCCAGGTGTATTTT
Allig_sinensis CCCCGCAATGAGGAAAA-----
CAGCTATCGCCCCAGAAGTGTATT
Gharial CCCCGCAATGAGGAAAA-----
CAGCTATCGCCCCAGGTGTATTTT
Crocodilus_nilo CCCCGCAATGAGGAAAA-----
CAGCTATCGCCCCAGGTGTATTTT
Crocodilus_poro CCCCGCAATGAGGAAAA-----
CAGCTATCGCCCCAGGTGTATTTT
Aspidoscelis
CAACCAAAGCAAGGAAGGAGCAGCAGCAGCAACAACAGCAGCCTCAGGTACTCCCA
Shinisaurus CAACCAAGTGGGGGAAT-----
CAGCAGCAGCCTCAGGCACTTCCT
Ophisaurus CAGCCCAAGCGGGGAAT-----
CAGCAACCGCCTCAGGCCTTTCCT
Anolis CCACCAAGGGGAGAAG-----
CCGCAACAGCCACAGGCATTCCCT
Eublepharis CAGTCCAAGAGGGTCCAG-----
CCACAGCAACCTCAGATATTGTTT
MournGekko CAATCCAAGGGGTCAA-----
CAGCAACAACCTCAGATATTGTTT
Gekko_japon CAATCCAAGGGGTCAA-----
CAGCAACAACCTCAGATATTGTTT
Python CATCCTACGGAGGGAAAA-----
CAGCAACATCCCAGGCCTTTGCT
Boa_constrictor CATCCTAAGGAGGGAAAA-----
CAGCAACAGCCCCAGGCCTTTCCT

Vipera NNNNNNNNNNNNNNNNNNNN-----
NNNNNNNNNNNNNNNGGCTTTCCT
Protobothrops CATCCTAAGGAGGGAAAA-----
CAGCAACAGCCTCAGGGCTTTCCT
Crot_horrid CATCCTAAGGAGGGAAAA-----
CATCAACAGCCTCAGGGCTTTCCT
Crot_mitch CATCCTAAGGAGGGAAAA-----
CAGCAACAGCCTCAGGGCTTTCCT
Thamnophis TATCCTACGGAGGGAAAA-----
CAGCAACAGCCCCAGGGCTTTCCT
Cobra CATCCTAAGGAGGGAAAA-----
CAGCAACTGCAACAGCAACAGCCCCAGGGTTTTTCCT
Pantherophis CATCCTAAGGAGGGAAAA-----
CAGCAACAGCCCCAGGGCTTTCCT
Pogona -----
GATCTGCAGTCCAAGGCATTTCTT

Ornithorhynchus CCGTTCGGCAATGGATTCTTTCCC-----
TTCCAGCTGCAACCCTGG
Monodelphis CCATTTGGCAATGGGATGTTTCCT-----
TTTCATCAGCCACCCTGG
Mus_musculus CCATTTGGCAATGGACTTTACCCC-----
TATCCACAACCACCATGG
Rattus CCATTTGGCAATGGGCTTTACCCC-----
TATCAACAACCACCATGG
Cavia CCATTCAACAATGGATTATTCCCC-----
TTTCAACAACCACCATGG
Homo CCATTTGGAAATGGGCTATTCCCC-----
TATCAACAACCACCATGG
Equus CCATTTCGGCAATGGGCTATTTCCA-----
TATCATCAGCCACCGTGG
Ursus
CCATTTCGGCAATGGGCTATTCCCACCATTTCAGCAATGGGCTCTATCAACAGCCACCCTGG
Bos CCATTTCGGCAATGGGCTATTTCCC-----
TATCAACAGCCACCGTGG
Sus CCATTTCGGCAATGGGCTATTTCCC-----
TATCAACAGCCACTGTGG
Tursiops CCATTTGGCAATGGGCTATTTCCC-----
TATCAACAGCTACCGTGG
Allig_mississip CCCTATAGTAATGCACATTTTCCT-----
TATCAGCAGCAACCTTGG
Allig_sinensis CCCTACAGTAATGCACATTTTCCT-----
TATCAGCAGCAACCTTGG
Gharial CCCTATAGTAATGCACATTTTCCT-----
TATCAGCAGCAGCCTTGG
Crocodilus_nilo CCCTATAGTAATGCACATTTTCCT-----
TATCAGCAGCAGCCTTGG

Crocodilus_poro CCCTATAGTAATGCACATTTTCCC-----
 TATCAGCAGCAGCCCTGG
 Aspidoscelis CCA-----
 TACCTGCAACAGCCCTGG
 Shinisaurus CCA-----
 CATCTGCAGCAGCCCTGG
 Ophisaurus CCA-----
 CATCCTCAGCAGCCCTGG
 Anolis CCA-----
 CATCCTCAACAGCCCTGG
 Eublepharis CCA-----
 AGACAGCAATATCCCTGG
 MournGekko CCA-----
 AATCAGCAACATCTCTGG
 Gekko_japon CCA-----
 AATCAGCAACATCTCTGG
 Python CCA-----
 TATCCACAACAGCCTTGG
 Boa_constrictor CCA-----
 TATCCACAACAGCCTTGG
 Vipera CCA-----
 TATTCACAACCACCTTGG
 Protobothrops CCA-----
 TATCCGCAACCACCTTGG
 Croc_horrid CCA-----
 TATCTGCAACCACCTTGG
 Croc_mitch CCA-----
 TATCCGCAACCGCCTTGG
 Thamnophis CCA-----
 TATTCACAACCACCTTGG
 Cobra CCA-----
 TATTCACAACCACCTTGG
 Pantherophis CCA-----
 TATTCACAACCACCTTGG
 Pogona CCA-----
 CATCAGCAACAGCCCTGG

Ornithorhynchus
 CAAATTCCACCG-----
 Monodelphis CATATTCCACAGTTT-----
 TATAATCCAGGAGGCTTTCCATCACCGCCAAACAACCCA
 Mus_musculus
 CCAATTCCACAG-----
 Rattus
 CCAATTCCACAG-----
 Cavia
 CCAATTCCACAG-----

Homo
CAAATTCACAG-----
Equus
CAAGTTCACAC-----
Ursus
CAAGTTCACAT-----
Bos
CATATTCACAT-----
Sus
CATGTTCCACAT-----
Tursiops
CATGTTCCACAA-----
Allig_mississip CACATCCCACAGATT-----
TACAACCAGGGAGGCTTCTTACCACAG---CTGAACCCA
Allig_sinensis CACATCCCACAGATT-----
TACAACCAGGGAGGCTTCTTACCACAG---CTGAACCCA
Gharial CACATCCCACAGATT-----
TACAACCAGGGAGGCTTCTTACCACAG---CTAAACCCA
Crocodilus_nilo CACATCCCACAGATT-----
TACAACCAGGGAGGCTTCTTACCACAG---CTAAACCCA
Crocodilus_poro CACATCCCACAGATT-----
TACAACCAGGGAGGCTTCTTACCACAG---CTAAACCCA
Aspidoscelis CATTTTCCACAGATC-----
TTTCGTCAAGGAGCCTTCCAGCCA-----TTTGGACCA
Shinisaurus CATTTCCACCGATT-----
TTCGGTCATGGAGGCTTCCAACCACAACCATTCAGGCCA
Ophisaurus CATTTCCACAGATG-----
TTTGGTCATGGAGGCTTCCAACCACAATCGTTCGGACCA
Anolis CAATTTCCACAGATT-----
TTTGGTCATGGAGGCTTCCAGCCACAACACTGTTCAACCCA
Eublepharis CATTTTTCCACAGATT-----
TTCAATCAAGGAGGCTTCCACCCACAATCCTTTGGCCCA
MournGekko CATTTTCCACAGATT-----
CTCAGTCAAGGAGGCTTCCACCCACAACCATTTAGCCCA
Gekko_japon CATTTTCCACAGATT-----
CTCAGTCAAGGAGGCTTCCACCCACAACCATTTAGCCCA
Python CATTTTCCACAGATT-----
TTTGGTGCAGGAGGCTTCCAACCACAACAGTTTGGCCCC
Boa_constrictor CATTTTCTACAGATT-----
TTTGGCCCAGGATGCTTCCAACCACAACCGTTTGGCCCN
Vipera
CATTTTCCACAGTTCCCATATATTGTATCAAGAGGCTTCCATCCAAGACATTTA---TCG
Protobothrops CATTTTCCACAGCTT-----
TTTGGTCCAAGAGGCTTCCAACCAAAACATTTTGGGTCT
Crot_horrid CATTTTCCACAGCTT-----
TTTGGTTCAAGAGGCTTCCAACCAAAACATTTTGGGTCT
Crot_mitch AATTTTCCACAGCTT-----

TTTGGTTCAAGAGGCTTCCAACCAAACATTTTGGGTCT
Thamnophis CATTTTCCACAGCTA-----
TTTGGGTCCAGAGGCTTCCAACCCAAACGGAGCCAAGGT
Cobra CATTTTCCACAGATT-----
TTTGGTCCAAGAGGCTTCCAACCAAACACTATGGGTCT
Pantherophis CATTTTCCACAGATT-----
TTTGGTCCAAGAGGCTTCCAACCACAACAGTATGGGTCA
Pogona CATTTTCCACAGGTGATG---
TTCGGTCATGGAGGCTTCCAGCCGCAAATGTTTCGGCCCA

Ornithorhynchus -----CAAATG---CCCCCT-----
GGCTACGGACGTCCACCAGGCAGCAACGAG
Monodelphis TTTTCATGGACGAATG---CCTCCA-----
GGGTATGGACGTCCACCAGTCAGCAATGAG
Mus_musculus -----AGGGGA---CCACCA---
ACAGCGTTTGGACGGCCAAAGTTCAGCAATGAA
Rattus -----ACAGGA---CCACCA---
ACAGGGTTCGGACGACCCAAGTTCAGCAATGAA
Cavia -----AGGATGCCGCCCCCA-----
GGTTATGGACGCCCACTCAGCAATGAA
Homo -----AGGTTACCACCACCA-----
GGTTATGGACGCCCAATCAGCAATGAA
Equus -----AGGCTA---CCACCA-----
GGTTATGGACGTCCACTAGGCAGCAATGAA
Ursus -----AGGGTA---CCACCA-----
GGTTATGGACGTCCGCCAGGCAGCAATGAA
Bos -----AAGATA---CCACCA-----
GGTTTTGGACGTCCACCAGGTAGCAATGAA
Sus -----AGGATA---CCACCA-----
GGCTATGGACGTCCACCAACCAGCAATGAA
Tursiops -----CCACCA-----
GGTTATGGACGTCCACCAGTCAGCAATGAA
Allig_mississip CAACACAGACAAATG---CCTCCA-----
GGGTTTGGACAGCCACCTATCAGCAATGAA
Allig_sinensis CAACACAGACAAATG---CCTCCA-----
GGGTTTGGACAGCCACCTATCAGCAATGAA
Gharial CAACACAGACAAATG---CCTCCA-----
GGGTTTGGACAGCCACCTATCAGCAATGAA
Crocodilus_nilo CAACACAGACAAATG---CCTCCA-----
GGGTTTGGACAGCCACCTATCAGCAACGAA
Crocodilus_poro CAACACAGACAAATG---CCTCCA-----
GGGTTTGGACAGCCACCTATCAGCAATGAA
Aspidoscelis TATCAGGGACATATG---CCA-----
TTGGGACGGCCACCTGTCAGCAATGAA
Shinisaurus TATCAGGGACATGTG---CCA-----
TTTGGACGTCCACCTGTCAGCACTGAA
Ophisaurus TATCAGGGACGTATG---CCA-----

TTTGGACGACCACCTGCCAGC---GAA
Anolis TATCAAGGACATATG---CCA-----
TTTGGACGGCCACCTAACAGC---GAA
Eublepharis TTTCAAGGAAGTATG---CCTCCT-----
GGATTTGGACATCCACCAATCAGTAATGAA
MournGekko T TTCACGGACGTATG---CCTGCT-----
GGATTTGGACGACCACCAATCAGCAATGAG
Gekko_japon T TTCACGGACGTATG---CCTGCT-----
GGATTTGGACGACCACCAATCAGCAATGAG
Python TATCAGAGACATATG---CCA-----
TTTGGACGACCACCTATCAGCAATGAA
Boa_constrictor TATCAGGGACATATG---CCA-----
TTTGGACGGCCACCTGTCAGCAATGAA
Vipera GCAATGGGCCATATG---CCA-----
TTTGGACAGCCACCTGTCAGCAATGAA
Protobothrops TATCAGGGACATATG---CCA-----
TTTGGACAGCCACCTGTCAGCAATGAA
Crot_horrid TATCAGGGACATATG---CCA-----
TTTGGACAGCCACCTGTCAGCAATGAA
Crot_mitch TATCAGGGACATATA---CCA-----
TTTGGACAGCCACCTGTCAGCAATGAA
Thamnophis TATTGCCACCATATG---CCA-----
TTTGGACAGCCACCTGTCAGCAATGAA
Cobra TATCAGGGACATATT---CCA-----
TTTGGACAGCCACCTGTCAGCAACGAA
Pantherophis TATCAGGGACATATG---CCA-----
TTTGGACAGCCACCTGTCAGCAATGAA
Pogona TATCAGGGACGCACG---
CCGCTTGGGCGACCACTTGGACGGCCACATGTGAGCAACGAA

Ornithorhynchus
GAAGGTGGGAATCCATATTTTCGGCTACTTTGGCCACCAGGGCTTTGGGGGCAGACCCCCG
Monodelphis
GAAGGAGGGAATCCTTATTTTGGCTATTTTGGATATCATGGATTTGGAGGGCGACCCCCA
Mus_musculus GAA---
GAAATCCTTACTATGCATTTTTTGGATATCACGGCTTTGGGGGTCGT---CCT
Rattus GAA---
GAAATCCTTATTATGCATATTTTGGATATCACGGCTTTGGGGGCCGT---CCT
Cavia
GACGGAGGGAATCCTTATTTTCGGATTTTTTGGATATCCTGGCTTTGGAGGTCGT---CCC
Homo
GAAGGGGGGAATCCTTACTTTGGATATTTTGGATATCATGGCTTTGGGGGTCGCCCTCCT
Equus
GAAGGCGGGAATCCTTACTTTGGATATTTTCGGATATCATGGATTTGGGGGTCGTCCCTCCT
Ursus
GAAGGCGGGAATCCTTACTTTGGATATTTTGGATATCAGGGATTTGGGGGTCGTCCCTCCT
Bos

GAAGGTGGGAACCCCTTCTTTGGATTTTTTTGGATATCATGGATTTGGGGGCCGTCTCCT
Sus
GAAGGCGGGAATCCTTACTTTGGATTTTTTTGGATATCATGGATTTGGGGGCCGTCTCCT
Tursiops
GAAGGTGGGAATCCTTACTTTGGATATTTTTGGATATCATGGATTTGGGGGCCGTCTCCT
Allig_mississip GAAGGAGGGAATCCTTACTATGGATAC---
TTCTTTCAAGGGCTTGGACAGAGGCCCCCC
Allig_sinensis GAAGGAGGGAATCCTTACTATGGATAC---
TTCTTTCAAGGGCTTGGACAGAGGCCCCCC
Gharial GAAGGAGGGAATCCTTACTATGGATAC---
TTCTTTCAAGGGCTTGGACAGAGGCCCCCC
Crocodilus_nilo GAAGGAGGGAATCCTTACTATGGATAC---
TTCTTTCAAGGGCTTGGACAGAGGCCCCCC
Crocodilus_poro GAAGGAGGGAATCCTTACTATGGATAC---
TTCTTTCAAGGGCTTGGACAGAGGCCCCCC
Aspidoscelis GAA---GGGACTCCATATTTTTGGATAT---
GGTTCCATGGGCTGGGAGGTAGACCTCCC
Shinisaurus GAA---GGGACTCCCATTATGGATAT---
GGCTCCAAGGGATGGGAGGTAGACCTCCT
Ophisaurus GAA---GGGACTCCCTATTTTTGGGTAT---
GGCTACCAAGGT-----AGACCTCCT
Anolis GAA---GGGAATCCCTATTTTTGGACCT---
GGCTACCAAGGGATGGGCGGTCGGCCTCCA
Eublepharis GAA---GGGACTCCATACTATGGATAT---
GGCTATCATGGCCTGGGAAACAGACGTCCA
MournGekko GAA---GGGACACCGTACTATGGATAT---
GGCTATCCAGGACTGGGAGTCAGG---CCC
Gekko_japon GAA---GGGACACCGTACTATGGATAT---
GGCTATCCAGGACTGGGAGTCAGG---CCC
Python GAA---GGGACTCCATATTTTTGGATAT---
GGCTACCATGGGTTAGGAAATAGGCTTCCT
Boa_constrictor GAA---GGGACTCCATATTTTTGGATAT---
GGCTACCATGGGTTAGGAAATAGGCTTCCT
Vipera GAA---GGGACTCCGTATTTTTGGATAT---
GGCTACCACGGGTTAGGAAATCGGCCTCCT
Protobothrops GAA---GGGACACCGTATTTTTGGATAT---
GGCTACCACGGGTTAGGAAATCGGCCTCCT
Crot_horrid GAA---GGGACACCGTATTTTTGGATAT---
GGGTACCACGGGTTAGGAAATCGGCCTCCT
Crot_mitch GAA---GGGACACCGTATTTTTGGATAT---
GGCTACCATGGGTTAGGAAATCGGCCTCCT
Thamnophis GAA---GGGACTCCATATTTTTGGATAT---
GGCTACCATGGGTTAGGAAATCGGTCTCCT
Cobra GAA---GGGACTCCATATTTTTGGATAT---
GGCTACCATGGGTTAGGAAATCGGCCTCCT
Pantherophis GAA---GGGACTCCATATTTTTGGATAT---
GGCTACCATGGGTTAGGAAATCGGCCTCCT

Pogona GAA---GGGGCTCCTTATTTTGGGTAT---
GGCTACCACGGGATGGGACATAGACCTCCT

Ornithorhynchus
TACTACTCAGAAGAAATGAAGGAAGAA-----GAGAAGGAAAGC

Monodelphis
TATTATTTCAGAAGAGATGTTTGAACAAGACTTTGAAAAGCCCAA---GAGGAAGATCCC

Mus_musculus TATTACTCAGAAGAGATGTTTGAA---
GATTATGAAAAACCCAAA---GAAAAAGACCTT

Rattus TATTACTCAGAAGAGATGTTTGAA---
GATTATGAAAAACCCAAA---GAAAAAGATCCT

Cavia TATTATTTCAGAAGAGATGTTTGAA---
GATTATGAAAAACCTAAG---GAAGAAGATCCT

Homo
TATTATTTCAGAAGAAATGTTTGAACAAGATTTTAAAAACCCAAA---GAAGAAGATCCT

Equus TACTATTTCAGAAGAGATGTTTGAA---
GATTTTAAAAACCCAAA---GAAGAAGATCCT

Ursus
TATTATTTCAGAAGAGATGTTTGAACAAGATTTTAAAAAGCCCAA---GAAGAAGATCCT

Bos TATTATTTCAGAAGAGATGTTTGAA---
GATTTTAAAAACCCAAA---GAAGAAGATCCT

Sus
TATTACTCAGAGGAGATGTTTGAACAAGATTTTAAAAACCCAAA---GAAAAAGATCCT

Tursiops
TATTATTTCAGAAGAGATGTTTGAACAAGATTTTAAAAACCCAAA---GAAAAAGATCCT

Allig_mississip
TATTACTCAGAGGAAATGTTTGAACATGAGTATGACAAACCCAAACCTGAGAAAGAAGCC

Allig_sinensis
TATTACTCAGAGGAAATGTTTGAACATGAGTATGACAAACCCAAACCTGAGAAAGAAGCC

Gharial
TATTACTCAGAGGAAATGTTTGAACACGAGTACGACAAACCCAAACCTGAGAAAGAAGCC

Crocodilus_nilo
TATTACTCAGAGGAAATGTTTGAACACGAGTACGACAAACCCAAACCTGAGAAAGAAGCC

Crocodilus_poro
TATTACTCAGAGGAAATGTTTGAACACGAGTACGACAAACCCAAACCTGAGAAAGAAGCC

Aspidoscelis
TATTACTCAGAAGAGATGTTTGAACAAGACTTTGAGAAACCCAAA---GAAAAAGATCCC

Shinisaurus
TATTATTCTGAAGAGATGTTTGAACAAGACTTTGAGGAAGCCAAA---GAAAAAGAAGCC

Ophisaurus
TATTATTCTGAAGAGATGTATGAACAAGACTTCGAGAAACCCAAA---GAAAAAGAGCCC

Anolis
TATTATTCTGAAGAGATGTTTGAACAAGAA-----GACAAAGAAGCA

Eublepharis TATAATTCTGAAGAG---
TTTAAAAATGACTATGAGAAACCCAAA---GAAAAAGAAGCC

MournGekko TATAATTCTGAAGAG---
TTTGAACAAGACTATGAGAAACCCAAA---GAAAAAGAAGCC

Gekko_japon TATAATTCTGAAGAG---
TTTGAACAAGACTATGAGAAACCCAAA---GAAAAAGAAGCC
Python
TATTATTCTGAAGAAATGTTTGAACAAGACTTTGAGAAACCCAAA---GAAAAAGACTCC
Boa_constrictor
TACTATTCTGAAGAGATGTTTGAACAAGACTTTGAGAAACCCAAA---GAAAAAGACCCC
Vipera
TATTATTCTGAAGAGATGTTTGAACAAGACTTTGAGAAACCCAAA---GAAAAAGAACCC
Protobothrops
TATTATTCTGAAGAGATGTATGAACAAGACTTTGAGAAACCCAAA---GAAAAAGAACCC
Crot_horrid
TATTATTCTGAAGAGATGTATGAACAAGACTTTGAGAAACCCAAA---GAAAAAGAACCC
Crot_mitch
TATTATTCTGAAGAGATGTATGAACAAGATTTTGAACAAGACTTTGAGAAACCCAAA---GAAAAAGAACCC
Thamnophis
TATTATTCTGAAGAGATGTTTGAACAAGACTTTGAGAAACCCAAA---GAAAAAGAACCC
Cobra
TATTATTCTGAAGAGATGTTTGAACAAGACTTTGAGAAACCCAAA---GAAAAAGAACCC
Pantherophis
TATTATTCTGAAGAGATGTTTGAACAAGACTTTGAGAAACCCAAA---GAAAAAGAACCC
Pogona ---
TATTCTGAAGAAATGTTTGAACAAGACTTTGAAGAACCTGTA---GAAAAAGAACCT

Ornithorhynchus CCAAGGAGGAC-----
AGTCCCTCCCCTGAGCCTACGGCCAACTCCACC
Monodelphis CCCAAGTAGAG-----
AGTACCACCGCAGCCCCTCCAACGAACTCCACG
Mus_musculus
CCTAAACCAGAGGACCCACCTCCAGATGACCCACCCCCAGAGGCCTCTACAACTCAACT
Rattus
CCTAAACCTGAGGACCCGCCCCAGATGACCCACCCCCAGAGGCCTCTACAAATTCAACA
Cavia CCTAAGCCAGAG-----
GATCCACCATCAGAACCTTCAGCTAATTCTACA
Homo CCTAAAGCAGAA-----
AGTCCAGGCACAGAACCCACAGCTAATTCAACA
Equus CCTAAGCAGAG-----
AGTCCAGCCACTGAACCCTCGTCTAATTCAACA
Ursus CCTAAAAAGAG-----
AGTCCAGCTGCTGAGCCCTCGGGTAATTCTACA
Bos CCTAAAACAGAG-----
ACTCCAGCCACAGATCCTTCTGTTAATTCAACA
Sus CCCAAAACAGAG-----
ACTCCAGCCACTGAACCTTCAGTTAATCAACA
Tursiops CCTAAAACAGAG-----
AGTCCAGCCACTGATCCTTCGGTTAATTCAACA
Allig_mississip CCCAAGAAGAG-----
AGTCCCTGCAGCAGCCCCTGTCCCAAATGCCACT

Allig_sinensis CCCAAAGAAGAG-----
 AGCCCTGCAGCAGCCCCTGTCCCAAATGCCACT
 Gharial CCCAAAGAAGAG-----
 AGCCCTGCAGCAGCCCCTGTCCCAAATGCCACT
 Crocodilus_nilo CCCAAAGAAGAG-----
 AGCCCTGCAGCAGCCCCTGTCCCAAATGCCACT
 Crocodilus_poro CCCAAAGAAGAG-----
 AGCCCTGCAGCAGCCCCTGTCCCAAATGCCACT
 Aspidoscelis -----
 CCAGCACCTGACCCTGCAACTAATTCCACA
 Shinisaurus CCTAAA-----
 GCAACTGATCCTGCAACAAACTCAACA
 Ophisaurus CCTAAA-----
 ACAACGGATCCTCCAACCAACTCAACA
 Anolis CCCAAA---GAG-----
 AGCCCAGCAACTGACCCAGTGACCAATTCAACT
 Eublepharis CCCAAAACAGAA-----
 AGCCCAGCGACTGATCCTGCAACCAATGCAACA
 MournGekko CCCAATACAGAA-----
 AGCCCAGCAGCTGATCCTGCAACCAATGCAACA
 Gekko_japon CCCAATACAGAA-----
 AGCCCAGCAGCTGATCCTGCAACCAATGCAACA
 Python CCTAAA---GAG-----
 AATCCAGCAGCAGATCCTATAACAAACTCAACT
 Boa_constrictor CCTAAA---GAG-----
 AATCCAGCAGCCGATCCTACAATGAACTCAACA
 Vipera CCTAAG---GAG-----
 AATCCAGCATCAGATCCTACAACAAACTCAACG
 Protobothrops CCTAAG---GAG-----
 AATCCAGCATCAGATCCTACAACAAACTCAACA
 Croc_horrid CCTAAG---GAG-----
 AATCCAGCATCAGATCCTACAACAAACTCAACA
 Croc_mitch CCTAAG---GAG-----
 AATCCAGCATCAGATCCTACAACAAACTCAACA
 Thamnophis GCTAAA---GAG-----
 AATCCAGCATCAGATCCTACAACAAACTCAACA
 Cobra CCTAAA---GAG-----
 AAACCAGCATCAGATCCTACAACAAACTCAACA
 Pantherophis CCTAAA---GAG-----
 AATCCAGCATCAGATCCTACAACAAACTCAACA
 Pogona GCTAAA---GAA-----
 ACTCCAGCGACAAACCCTGTAACCAACTCAACC

 Ornithorhynchus
 GTTGCCGAGACCAACTCCACCCAGCCCAGTGGCCCGAGCCAGGCCGGGAGTCAGGGGGGA
 Monodelphis
 GTTCCTGAGACCAATTCAACTCAAGCAACTGTCCCTGTCTCAGGAGGGAGTCAAGGTGGA

Mus_musculus GTGCCTGATGCTAATGCCACTCAATCAATT-----
CCT-----GAAGGCGGA
Rattus GTGCCTGATGCTAATGCCACTCAATCAATT-----
CCTGGAGGGGTCAAGGTGGA
Cavia
GTTCTGAGACTAATTCTACCCAATAACA-----AATCAAGGCAA
Homo GTCCTGAGACGAATTCTACCCAA-----
CCAAATCCTAAAGGGAGTCAGGGAGGA
Equus
GTTCTGAAAATAATTCCACCCAACCAAATGCACCCAACCCAGAGGCAGTCAGGGTGA
Ursus
GGTCTGAGACTAATTCTACTCAGTCAAATGCACCCATCCCTGGAGGAAGTCAGGGTGA
Bos
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Sus
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Tursiops
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Allig_mississip
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Allig_sinensis
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Gharial
GTCCCAGTTGTCAGCACGACCACACCAGTCCCCCAGCCAAGGAGGGGATCAAGGAGGG
Crocodilus_nilo
GTCCCAGTTGTTAGCACGACCACACCAGTCCCCCAGCCAAGGAGGGGACCGAGGAGGG
Crocodilus_poro
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Aspidoscelis
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Shinisaurus
GTCTCTGACACAAATTCAACTATCTCTAATCCAGCC-----AACCAGGGAGGG
Ophisaurus
GTCTCTGACACAAATTCAACCATCTCTAATCCAGCC-----AGCCAGGGAGGG
Anolis -----
GACACAAACTCAACCGTATCTAATCCAGCC-----AGCCAAGGAGGG
Eublepharis -----
GACACAAATTCAACTCTTTCCAACCCAGCT-----GGTCAGGTAGGG
MournGekko -----
GACACAAATTCAACTCTTTCCAATCCATCC-----AGCCAAGCAGGG
Gekko_japon -----
GACACAAATTCAACTCTTTCCAATCCATCC-----AGCCAAGCAGGG
Python GTTTCAGACACAAATTCAACCATT-----
CCAGCT-----AGCCATGGAGGG
Boa_constrictor GTTTCAGACACAAATTCAACCATT-----
CCAGCC-----AGCCATGGAGGG
Vipera GTTTCAGACACAAATTCCACCATT-----

CCAGCC-----AGCCATGGAGGG
Protobothrops GCTTCAGACACAAATTC AACCCATT-----
CCAGCC-----AGCCATGGAGGG
Crot_horrid GCTTCAGACACAAATTC AACCCATT-----
CCAGCC-----AGCCATGGAGGG
Crot_mitch GCTTCAGACACAAATTC AACCCATT-----
CCAGCC-----AGCCATGGAGGG
Thamnophis GTTTCGACACAAATTC AACCCATT-----
CCAGCC-----AGCCATGGAGGG
Cobra GTTTCAGACACAAATTC AACCCATT-----
CCAGCC-----AGCCATAGAGAG
Pantherophis GTTTCAGACACAAATTC AACCCATT-----
GCAGCC-----AGCAATGGAGGG
Pogona
GTCGCCGACACGAATACAACGGTTTCTAACCAGCC-----AGCCAAGGAGGG

Ornithorhynchus AACGCCACCGACCCTGGTCAGTCG---
GCGGGGAACGGATCTCCC GCCAGACTCCCGGG
Monodelphis AATGAGACCAGCACA-----
ACAGGGAATGAAGCTGAAGTGCAGAACCCTGGG
Mus_musculus AATGACACTAGCCCA-----
ATAGGAAACACAGGCCCTGGGCCGAACGCTGGG
Rattus AATGACTCTAGCCCA-----
GTAGGAAACACAGGCCCTGGGCCTAATGCTGGG
Cavia AATGACACCGGTCCA-----
ACACTAAACAGTATTCCTGGGCTGAATACTGGC
Homo AATGACACCAGCCCC-----
ACAGGAAACAGTACCCCAGGACTAAACACTGGG
Equus AATGACACCAGCCCA-----
ACAGGAAACAGTGGCTATGGGCCAAACACTGTG
Ursus AATGACACCAGCCCA-----
ACAGGC-----CCAAACATG---
Bos AATGACACCAGCCCA-----
GCAGGAAACAATGGTCAGGACCCTAACACTGTG
Sus AATGACACCAGCCCA-----
ACAGGAACCAGTGGCCAGGGGCCTAACCCCTAGA
Tursiops AATGACACCAGCCCA-----
ACAGGAAACAGTGTCCAGGGGTCTAACACTGTG
Allig_mississip
AATGCAACCCACCCTGGGGTCAGTGCTGGAGAGAACGGGACCCCTTCCCAAACCCCTGAG
Allig_sinensis
AATGCAACCCACCCTGGGGTCAGTGCTGGAGGGAACGGGACCCCTTCCCAAACCCCGAG
Gharial
AATGCATCCCACCCTGGGGTCAGTGCTGCGGGGAGCGGGACCCCTTCCCAAACCTCTGAG
Crocodilus_nilo
AATGCAACCCACCCTGGGGTCAGCGCTGGGGGGAGCGGGACCCCTTCCCAAACCCCGAG
Crocodilus_poro

AATGCAACCCACCCTGGGGTCAGCGCTGGGGGGAGCGGGACCCCTTCCCAAACCCCGAG
Aspidoscelis AATGCTACACTTTCTGGACTCAGTACCTCA-----
GGTGCCAATTCTCCAGTTCTTGAG
Shinisaurus
AATGCTACCATTTCTGGACTCAGTTCAACAAGCAATGGGGCCAATTCTCCAGACCTTCAA
Ophisaurus
AATGCTACTATTTCTGGACTCAGTACAATGAACAATGGTGCCAATTCTCCAGGCCTTCAA
Anolis
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Eublepharis
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MournGekko
AATGCTACCAATTCTGGGCTCAGTGTAAGTACAGTGGGGCCAATTCTCCAAACCTTGAA
Gekko_japon
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Python
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Boa_constrictor
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Vipera
AATGCTAGTCTTTTCAGGACTCAGCACAACAAACAATGAGGCAATTTT-----
Protobothrops
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Crot_horrid
AATGCTAATCTTTTCAGGACTCAGCACAACAAATAATGAGGCAATTTT-----
Crot_mitch
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Thamnophis
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Cobra
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Pantherophis
AATGCTACTCTTTTCAGGACTCAGCACGACAAATAACGAGGCAACTTTTCCAGGTCTTTCA
Pogona
AATGCTACCATTTCTGAACCCATCGCAACAGGCAATGGGGCCAATCCTCTAGGCCTTCAA

Ornithorhynchus CACGGCACGGTTCCCGATAACGGTGAG---
CCCCGGGTCCGCTCCTCAATGCCTCCGAC
Monodelphis -----ATC---
AACTTGGCTCCTGCTGTTAATGTCTCTGGC
Mus_musculus ACAATCCTACAGTTCAAACGGTGTC---
TTCCCTCCCCTAAAGTTAATGTTTCAGGC
Rattus ACAATCCTACAGTTCTAAATGGTGTC---
TTCCCTCTCCCTAAAGTTAATGTTTCAGGC
Cavia ACAACCCTACAGTTCAAATGGGATC---
TTCCACTCCCTACAGTTAATTTTTTCAGGC
Homo ACAACCTCCAGCTCAAATGGGATT---

GGCCCACTCCCTGCAGTCAACGCTTCAGGC
Equus AGCAACCGTACAGTTCAAATGGGGTC---
ATCCTACCCCCTACAGTTAATATTTTCAGGC
Ursus -----GCTCAAACGGGGTT---
AACTCATCCCCTACCGTTAATGTTTCAGGT
Bos AGCAACCTACAGTTCAAACAAC-----
CCTGTAGTAAATGTTTCGGC
Sus AGCAACCTACAGGTCAAACGGC-----
CCTGCAGTTAATGTTTCAGGC
Tursiops AGCAATCCTACAGCTCAAACAGC-----
CCTGCAGTAAATGTTTCAGGC
Allig_mississip AACAGCCAGCTGGTGTGAATGAGACC---
ACACCTTCTCCTACAGTTAATATCTCCAGC
Allig_sinensis AACAGCCAGCTGGTGTGAATGAGACC---
ACACCTTCTCCTACAGTTAATATCTCCAGC
Gharial AACAGCCAGCTGTTGAGAATGGGACC---
ACACCTTCTCCTACAGTTAATATCTCCAGC
Crocodilus_nilo AACAGCCAGCTGTTGAGAATGGGACC---
ACACCTTCTCCTACAGTTAATATCTCCAGC
Crocodilus_poro AACAGCCAGCTGTTGAGAATGGGACC---
ACACCTTCTCCTACAGTTAATATCTCCAGC
Aspidoscelis GGCAATCAATTGGTGGT-----
CCAACGCTTCTCCCCTGATTATGTTTCAGGA
Shinisaurus
AGCAAATTGGTTAGTGGGAATGGGGTCCCAACACCTTCTCCTACTGTTCTCATATCAGGA
Ophisaurus
AGCAAATTGCTTAGCGGAATGGGGTCCAACACCTTCTCCTAGTGTTCATGTCAGGA
Anolis
AACAAATATGTTTAGTGGGAATGCAGTCTCAACATCTTCGCCTACTACTCAGACGTCAGAA
Eublepharis
AGCAGATGGCATATTGGAAATGGCGTCCCAACACTTTTACCTACTCTTCACGTCTCAAAT
MournGekko
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Gekko_japon
AGCAGACTGCTTATTGTAAATGGGGTCCCAACGATATCACCTACTCTTCATGTCTCAAAA
Python
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Boa_constrictor
AATAAATTTGCTAATGGAAATGGGATCCCAACACCTTCTCCTGCTGATCACATCTCAGCA
Vipera -----
GTTTCATGTAAATGGAATCCCAACACCTTCTCCTACTGGTCATATGTCAGGA
Protobothrops -----
GTTTCATGGAAATGGAATCCCAACACCTTCTCCTACTGGTCATATGTCAGGA
Crot_horrid -----
GTTTCATGGAAATGGAATCCCAACACTTTCTCCTACTGGTCATATGTCAGGA
Crot_mitch -----
GTTTCATGGAAATGGAATCCCAACACCTTCTCCTACTGGTCATAGGTCAGGG

Thamnophis

AAAAAAATTGTTAGTGGAAACGGAATACCAACACCTTCTCCTACTGGTCATATGTCAGGA

Cobra

AAAAAAATTGTTAGTGGAAACGGAATCCCAACACCTTCTCCTACTAGTCATATGTCAGGA

Pantherophis

AAAACAATTGTTAGCGGAAATGGAATCCCAACACCTTCTCCTACTGGTCATGTGTCAGGA

Pogona

AGCAAGTTAGTAGACGGGAATGGGTTTTCAACACCTTCTCCTACTGCTCATGTATCAGGT

Ornithorhynchus

CACGGGGGAGCGAGAGGTCCGAAGCCCACGGGCCCGGGCCCCGGCCAGCCGCCTTTCCGG

Monodelphis CAAGACGGACCAGGAAGT-----

CAGGTTCCCCCTGGCCCATATCAGCCAACACTATTCTT

Mus_musculus CAGGGAGTACCAAAAAGC-----

CAAATTCGGTGGAGACCAAGTCAGCCAAATATTTAT

Rattus CAGGGAGTACCGAAAAAC-----

CAAATTCGGTGGAGACCAAGTCAGCCAAATATTTAT

Cavia CAAGTAATACCCGGAAGT-----

CAAATTCATGGAAACCAAATCAGCCCAATATTTAT

Homo CAGGGAGGGCCAGGAAGT-----

CAAATCCCATGGAGACCAAGTCAGCCAAATATTCGT

Equus CAGGGAATACCAAGACGT-----

CAAATCCCATGGAGACCAAGTCAGCCAAAGATTCAT

Ursus CAGGCAGTACCAAGAACT-----

CAAATCATGTGGGGACCAAGTCAGCCAAATATTCAT

Bos CAAGGAGTTCCAAGAAGT-----

CAAACCCCGTGGAGACCAAGTCAGACAAATATTCAT

Sus CAGGGAGTTCCAAGAAGT-----

CAAAGCCCATGGGGACCAAGGCAGACAATTATTCAT

Tursiops CAGGGAGTTCCAAGAAGT-----

CAAACCCACAGGGACCAAGTCAGACAAATATTCAT

Allig_mississip

CCGCAGGAGCCAGGCAGTGAGGGAGTGCCACAGAATGGGCCTGAGCAGCCAAATGCCAGG

Allig_sinensis

CCGCAGGAGCCAGGCAGTGAGGGAGTGCCACAGAATGGGCCTGAGCAGCCAAATGCCAGG

Gharial

CCACAGCAGCCAGGCAGTGAGGGAGTGCCGCAGAATGGGTCCGAGCAGCCAAATGCTGGG

Crocodilus_nilo

CCACAGGAGCCAGGCAATGAGGGAGTGCCGCAGAATGGGCCTGAGCAGCCAAATGCTGGG

Crocodilus_poro

CCACAGGAGCCAGGCAATGAGGGAGTGCCGCAGAATGGGCCTGAGCAGCCAAATGCTGGG

Aspidoscelis GTTAATGCG-----

ATAGCACAGAATGGGAATAACCAATCAAGTCTGAGA

Shinisaurus GGGAATGGA-----

GCAGCCCAGAATGGCATTGATCAATCAAGTCATAGG

Ophisaurus GCGAATGGA-----

GCAGCACAGAATGGCATCGATCAATCAAGTCATAGA

Anolis GGAAATGGA-----
GTGGCACAGAATGTCCTTGAACAAATAAGGCATAGG
Eublepharis GGTGATACG-----
GCAGCCCAAATGGCATGGATCAGTCCGTTCATAGG
MournGekko GGTGATGTG-----
GCAGCACAGAATGTTATGGATCAATCAATTCATAGG
Gekko_japon GGTGATGTG-----
GCAGCACAGAATGTTATGGATCAATCAATTCATAGG
Python CAAAATGAA-----
GTAGCACAGAATGGCATTGATCAATTAAGTTATAGG
Boa_constrictor CAAAATGAA-----
GCAGGACAGAATGGCATTGATCAATCAAATTATAAG
Vipera CAAAATGAA-----
GCAGCACAAAATGGCATTGATCAATCAAATTATAGA
Protobothrops CAAAATGAA-----
GCAGCACAAAATGGCATTGATCAATCAAATTATAGA
Crot_horrid CAAAATGAA-----
GCAGCACAAAATGGCATTGATCAATCAAATTATAGA
Crot_mitch CAAAATGAA-----
GCAGCACAAAATGGCATTGATCAATCAAATTATAGA
Thamnophis CAAAATGAC-----
GCAGTCCAGAATGGCTTTGATCAATCAAATTATAGA
Cobra CAAAATGAA-----
GCAGCCCAGAATGGCTTTGATCAATCAAATTATAGA
Pantherophis CAAAATGAA-----
GCATCCCAGAATGGCTTTGATCAATCAAATCTATAGA
Pogona GGGAACGGA-----
GCAGCACAGGATGCCCTTGAGCAATCTGGCCACCAG

Ornithorhynchus GGCCGCCCCGCCAACCCCAAT---
GCGGCTCCAGGGTTCCCCGCGGGCCGACAGCGCCGC
Monodelphis GAAACTCTCCAAATCCTAAT-----
TTAAGAGGCTTTCCATAAGCAGACAATGG---
Mus_musculus GAGAATTATCCTTACCCAAAT-----
TATCCTTCAGAAAGACAATGG---
Rattus GAAAATTATCCTTATCCAAAT-----
TATCCTTCAGAAAGACAATGG---
Cavia GGAAGTTATCCAAAACCTAAC-----
ATCAGAAATTCTCCTTCAGGAAGACAATCA---
Homo GAAAATCATCCATATCCTAAT-----
ATAAGAAATTTTCCTTCAGGAAGACAGTGG---
Equus GAAAATTACCCAAATCCTAAC-----
ATCCGAAATTTTCCTGCAAGAAGACAATGG---
Ursus GAAAATTATCCAAATCCTAAC-----
AACCGAAATTTTCCTGTAGGGAGGCAATGG---
Bos GAAAATTATCCATATCCTAAC-----
ATTCGAAATTTTCCTGCAGGAAGACAATGG---

Sus GAAAATTATCCAAATCCTAAC-----
ATCCGAGGTTTTCTGCAAGAAGACAATGG---
Tursiops GAAAATTATCCAAATCCTAAC-----
ATCCGTAGTTTTCTGCAGGAAGACAATGG---
Allig_mississip AGGAATGCTCCAACCTTTGAC---
ATTATTCAACGTTTTCTGCAAACCGGCAGCAA---
Allig_sinensis AGGAATGCTCCAACCTTTGAC---
ATTATTCAACGTTTTCTGCAAACCGGCAGCAA---
Gharial AGGAATACTCCAACCTTTGAC---
ATTATTCAACGTTTTCTGCAAACCGGCAGCAA---
Crocodilus_nilo AGGAATACTCCAACCTTTGAC---
ATTATTCAACGTTTTCTGCAAACCGGCAACAA---
Crocodilus_poro AGGAGTACTCCAACCTTTGAC---
ATTATTCAACGTTTTCTGCAAACCGGCAACAA---
Aspidoscelis CCTAACTCTCCAAGCATGAAT---
GCCATCCAAAACTTTTCTCCGGATGCCCAACAA---
Shinisaurus CCTCAGTTTCCAAATGTCAAT---
GGTGTTCAAAGCTTTCCTTCAGGTAGTCAGCAA---
Ophisaurus CCAAAGTCTTCAACTGTCAAT---
GGCATTCAAAGCTTTCCTTCAGGTAGTCAACAA---
Anolis TCTAAGCTTCCAAATGGTGAT---
GTCATTCAAGTTTTCTTCAGGTAGACAGCAC---
Eublepharis
GCCAGCTCTCCAAATATCTACCATATTGTCCAAAACCTGCCTTCAGACCAGCATCAA---
MournGekko
GCCAGCTCTCCGAATAGCAATCACATAATTCAGAACTTGCCCTCAGACAAGCAGCAA---
Gekko_japon
GCCAGCTCTCCGAATAGCAATCACATAATTCAGAACTTGCCCTCAGACAAGCAGCAA---
Python CCTAAGCTTACAAATGCCAAT---
GTTTTCCACAACATTTTTTTCAGATGGTCAACAA---
Boa_constrictor CCTAAGCTTACAAATGCCAAT---
GTTTTTCACAACCTTATTTTCAGGTAGTCAACAA---
Vipera CCTAAGCTTACAAATACCAAT---
GTTTTTCACAATTTTTTCTCAGGTAGTCAACAA---
Protobothrops CCTAAGCTTACAAATACCAAT---
GTTTTTCACAATTTTTTTCAGGTAGTCAACAA---
Crot_horrid CCTAAGCTTACAGATACCAAT---
GTTTTTCACAATTTTTTTCAGGTAGCCAACAA---
Crot_mitch CCTAAGCTTACAGATACCAAT---
GTTTTTCACAATTTGTTTTTCAGGTAGCCAACAA---
Thamnophis CCTAAGCTTACAAATACCAAT---
GTTTTTCGAAACTTTTTTCTGGTAGTCAACAA---
Cobra CCTAAGCTTACAAATACCAAT---
GTTTTTCACAACCTTCTTTTCAGGTAGTCAACAA---
Pantherophis CCTAAGCTTACAAATACCAAT---
GTTTTTCACAACCTTTTTTTCAGGTAGTCAACAA---
Pogona CCTAAGCTTCCAAAT-----

ATGATTCAAAGCTTTCCTCCAGCTAGTCAACAG---

Ornithorhynchus
CCCTTCGTCCATCCCTTCGGCCGCCCCTTTCGACCGGCCCGTCGGCCGCCCCGTTCGGCCGA
Monodelphis -----
AGTCAAACAAGCTTCCCTGTAGGACCT
Mus_musculus -----
CAAACCACTGGTACC---CAGGGGCCT
Rattus -----
CAAACCACTGATACC---CAGGGGCCT
Cavia -----
AATCCCACACATACTGCCACTGGGCAG
Homo -----
TATTTCACTGGTACTGTCATGGGGCAC
Equus -----
CGTCCCCTGGTACCGCCACAGGGAAT
Ursus -----
CGTCCCCTGGTACTATCATGGGGCAC
Bos -----
CATCCTACTGGTACCTCTATGGGGAAC
Sus -----
CGTCCTCCTGGTCCTGCTATGGGGCAC
Tursiops -----
CGACCTACTGGCACCGCTACGGGGCAC
Allig_mississip -----
ATGTTTGGGCATGGTTCTTTTGGCCAT
Allig_sinensis -----
ATGTTTGGGCATGGTTCTTTTGGTTCGT
Gharial -----
ATGTTTGGGCATGGTTCTTTTGGCCGT
Crocodilus_nilo -----
ATGTTTGGGCATGGTTCTTTTGGCCAT
Crocodilus_poro -----
ATGTTTGGGCATGGTTCTTTTGGCCAT
Aspidoscelis -----
TCTGCAGGGCATGGT-----
Shinisaurus -----
TCCACAGGGCATGGT-----
Ophisaurus -----
CCCACAGGGCATGGT-----
Anolis -----
TCCACTATGCAAGTT-----
Eublepharis -----
TCCACAGGGAATGGT-----
MournGekko -----
TCCACAGGAAATGGT-----
Gekko_japon -----

TCCACAGGAAATGGT-----
 Python -----
 TCCAGAGGACATAGT-----
 Boa_constrictor -----
 TCCAGAGGACGTAGT-----
 Vipera -----
 TCCAGGGGACGTGAT-----
 Protobothrops -----
 TCCAGGGGACGTGAT-----
 Croc_horrid -----
 TCCAGGGGACGTGAG-----
 Croc_mitch -----
 TCCAGGGGACGTGAT-----
 Thamnophis -----
 TCAAGGGGACACGGT-----
 Cobra -----
 CCCAGGGGACGTGGT-----
 Pantherophis -----
 TCCAGGGGACGTGGT-----
 Pogona -----
 TCAACAGGGCATGTC-----

Ornithorhynchus
 AGGGATCACGGTCCCACCTACGGGAATACGCCAAGGCCAGGGGCCCCCTCCGATGGAAC
 Monodelphis
 AGACTGATGGGCCCTTTTTATAGAAATTATCCCAATCAAAGGAGCTAC---CAATGGCCC
 Mus_musculus
 AGACAGAATGGACCTGGCTACCGAAATCCACAAGTTGAAAGGGGTCCT---CAGTGGAAT
 Rattus
 AAACAGAACGGACCTGGTTACCAAATCCACAATCCAAAGGGGTCCT---CAGTGGAAT
 Cavia
 AGACCACCTGGACCTTCTTACCGGAACCAACCAGGTCAATGGGATGCT---CAGGGGAAC
 Homo
 AGACAGAATAGGCCTTTTTACAGAAATCAACAAGTTCAAAGGGGTCCT---CGGTGGAAC
 Equus AGACAGAATGGGCCTTTCTACCGAAAT---
 CAAGTTCAAAGGGATCCT---CAGTGGAAC
 Ursus
 AGACAGAATGGGCCTTTTTACCGAAATCAACAGTTTCAACGGGGTCCT---CGGTGGAAC
 Bos
 AGACGTAATGGGCCTTTTTACCGAAATCAACAATTCAAAGGGGTCCT---CGGTGGAAC
 Sus
 AGGCGTAATGGGCCTTTTTACCGAAATCAACAATTCAAAGGGGTCCT---CGGTGGAAC
 Turciops
 AAACGTAATGGGCCTTTTTACCGAAATCAACAATTCAAAGGGGTCCT---CGGTGGAAC
 Allig_mississip
 AGAGAGTATCCCAGGGATACAGGAGCTCTCTGGATCAAGGTGCTGCC---AGGCACAGA
 Allig_sinensis

AGAGAGTATTCCGAGGGATACAGGAGCTCTCTGGATCAAGGTGCTGCC---AGGCACAGA
 Gharial
 AGAGAGTATTCCCAGGGATACAGGAGCTCTCTGGATCAAGGTGCTGCC---AGGAACAGA
 Crocodilus_nilo
 AGAGAGTATTCCCAGGGATACAGGAGCTCTCCGGATCAAGGTGCTGCC---AGGCACAGA
 Crocodilus_poro
 AGAGAGTATTCCCAGGGATACAGGAGCTCTCCGGATCAAGGTGCTGCC---AGGCACAGA
 Aspidoscelis -----
 TCAAATATTTATAATCTTCATCCAGATATGAGGGAACCA---AGGCACAAT
 Shinisaurus -----
 TCACATGTCTATAAACCCACACCCAGATATGGGAGACACA---AGGCACAAC
 Ophisaurus -----
 TCACATGACTATAAACCCCATCCAGATATGGGAGACATG---AGGCACAAC
 Anolis -----
 TCTAATATACATAAACCCACATGAACATATGGAAAATACA---AAGCAGAAT
 Eublepharis -----
 TTGCCTGTCTACAAACACTATCCTGGTATGGAAAATTCA---AGGCCCAAC
 MournGekko -----
 CTGCATGTCTACAAACCCTATCCAGGTATGGATGAGTCA---AGGCACAAC
 Gekko_japon -----
 CTGCATGTCTACAAACCCTATCCAGGTATGGATGAGTCA---AGGCACAAC
 Python -----
 TCATATATTTATAAAGCCAACCCAGATATGAGTAATACA---AGGCACAAC
 Boa_constrictor -----
 TCATATATTTATAAACCACACAGATATGGGTAATACA---AGACACAAC
 Vipera -----
 TCATATATTTATAAAGCCAACCCAGATATGGGTAATACA---AGATACAAC
 Protobothrops -----
 TCATATATTTATAAACCCTCAGATATGGGTAATACA---AGACACAAC
 Crot_horrid -----
 TCATATATTTATAAACCCTCAGATATGGGTAATATA---AGACACAAC
 Crot_mitch -----
 TCATATATTTATAAACCCTCAGATATGGGTAATACA---AGACACAAC
 Thamnophis -----
 TCAGATATTTATAAACCCTCAGATATGGGTAATTCA---AGACATGAT
 Cobra -----
 ACATATATTTATAAACCCTCAGATATAAGTAATTCA---AGACATAAC
 Pantherophis -----
 TCATATATTTATAAACCCTCAGATATGGGTAATTCA---AGACATAAC
 Pogona -----
 CCACATATTTATAATCCCCACTCAGAGATGGGAGATGCA---AGGCACAAC

 Ornithorhynchus GCAGTCACCTCTGAAGGCAAACGGGTC---
 GCCCGTCCCGGATATCCCATGTACCGCAGG
 Monodelphis AGTTTAGCTTATGTAAGCAAGCAAATA---
 GTTCGCCAGGAAACACAGCTTACCAAAAA
 Mus_musculus TCCTTTGCTTGGGAAGGCAAACAAGCT---

ACTCGTCCAGGAAACCCAACCTTACGGTAAA
Rattus
TCCTTTGCTTGGGAAGGCAAACAAGCTACTACTCATCCAGGAAATCCAACCTTACCACAAA
Cavia TCCTTCGCTTGGGAAGGCAAACAAGCA---
GCTGGGCCCAAAAATCCAACCTTATCACAAA
Homo TTCTTTGCTTGGGAACGTAAACAAGTA---
GCTCGTCCAGGAAATCCAGTTTATCACAAA
Equus TCCTTTGCTTGGGAGGGCAAACGAACA---
GTTTCATCCAGGAAATCCAATTTATCGCAA
Ursus TCCTTTGCTTTGGAACGCAAACAAGCA---
GTTTCGTCCAGGAAATCCAATTTATCGCAAG
Bos TCCTTTGTTTTGGAAGGCAAACAAGCA---
ATTCGTCTAGGATATCCAATATATCGCAGA
Sus TCTTTTACTTTGGAAGGCAAACAAGCA---
GTTTCGTCCAGGATATCCAACATATCGCAGA
Tursiops TCCTTTGTTTTGGAAGGCAAACAAGCA---
GTTTCGCCAGGATATCCAATATACCGCAGA
Allig_mississip GCATCTGCCTCCATGGTTAATCCCTCC---
ACTCCCTCAGAAAACCTCATTATACCGTAAA
Allig_sinensis GCATATGCCTCCATGGTTAATCCCTCC---
ACTCCCTCAGAAAACCTCATTGTACCGTAAA
Gharial GCATCTGCCTTCATGGTTAATCCCTCC---
ACTCCTTCAGAAAACCTCATTGTATCGTAAA
Crocodilus_nilo GCATCTGCCTTCATGGTTAATCCCTCC---
ACTCCTTCAGAAAACCTCATTGTATCGTAAA
Crocodilus_poro GCATCTGCCTTCATGGTTAATCCCTCC---
ACTCCTTCAGAAAACCTCATTGTATCGTAAA
Aspidoscelis GCTATGATTTCTAGAGGAAATTTTCCT---
ATACGGACTGAAAACCCAACATATGTCTCA
Shinisaurus ACTTTGATTTCTGGAGGGAATCCCTCC---
ATACAAACTGAAAACCCAACATATCCCTTG
Ophisaurus ACTTTGGTTTCTAGAGGAAATCCCTCT---
GTACAGTCTGAAAACCCAACATATCCCTTC
Anolis ---TTGATTTCAAGAGGGAACCCCTCA---
ATACAATCCGAAGACCCAACATATCCCATG
Eublepharis ACTTACATTTCTAATGGGAACCCCTTCT---
GGACATCCTGAAAACCCAACGTATCCATCC
MournGekko ACTTACATTTCTAGAGGGAATCCCTCT---
GGGCATCCTGAAAACCCAACATATCCATCA
Gekko_japon ACTTACATTTCTAGAGGGAATCCCTCT---
GGGCATCCTGAAAACCCAACATATCCATCA
Python ACTTTAGTTTCTAGAGGAAATCCCTTCA---
ATACAAGCTGAAAACCCAACAGAGCCTTGG
Boa_constrictor ACTTTAGTTTCTAGAGGAAATCCATCA---
ATACAAGCTGAAAACCCAACAGAGCCATGG
Vipera ACTTTAGTTTCTAGAGGAAATCCATCG---
ATACAAGCTGAAAACCCAGCAGATCCTTGG

Protobothrops ACTTTAGTTTCTAGAGGAAATCCATCG---
ATACAAGCTGAAAACCCAGCAGACCCTTGG
Crot_horrid ACTTTAGTTTCTAGAGGAAATCCATCG---
ATACAAGCTGAAAACCCAGCGGACCCTTGG
Crot_mitch ACTTTAGTTTCTAGAGGAAATCCATCG---
ATACAAGCTGAAAACCCAGCAGACCCTTGG
Thamnophis ACTTTAATTTCTAGAGGAAATCCATCA---
ATGCAAGCTGAAAACCCAGAAGAGCCTTGG
Cobra ACTTTAGTTTCTAGAGGAAATCCATCG---
ATGCAAGCTGAAAACCCCAAAGAGCCTTGG
Pantherophis ACTTTAGTTTCTAGAGGAAATCCATCG---
ATGCAAGCTGAAAATCCAGAAGACCCTTGG
Pogona ACTTTAACTTTTCTAGAGGAAATCCATCT---
ATACAGGCTGAAAACCCATCTCGTTCCTTT

Ornithorhynchus
CCTTTCCCCGTCGCCGCCCCGGGAGGGGTTTCCCCAACCGGGCGGGGAATCCCCTCAAT
Monodelphis GTTTATCCTTACATTTCTAAGAGCAAT---
TCTCCTAATCATGTATCTAATCCAGCAAAT
Mus_musculus CCTCCCTCTCCTACCTCCGGGGTT-----
AATTATGCAGGAAATCCAGTCCAT
Rattus CCTTCCCCCTCCTACCTCAAGAGTTAAT---
TATCCCAACTATGCAGGAAATCCAGTCAAT
Cavia GCTTACACTCCCCTTCCAGAAAGAAT---
TACCCAGTTATGCAGGAAACCCAGCAAAT
Homo GCTTACCCCTCCTACTTCAAGAGGCAAT---
TATCCCAATTATGCAGGAAATCCAGCAAAT
Equus TCTTATACTCCCCTACAAGAGGCAAT---
TCTCCCAATAATGCAGGAAATCCAGCAAAT
Ursus GCTTATGCTTCTACTGCAAGAGGGGAAT---
TCTCCCAATCATGCAGGAAATCTGGGCAAT
Bos GCTTATGCCTCCACCGTAAGGGGCAAT---
TATCCCAATTATGCAGGAAATCCAGTAAAT
Sus GTTTATGGTTCTACTGCAAGAAGTAAT---
CCCCCAATTATGCAGGAAATTCAGCGAAT
Tursiops GCTTATGCTTCCCTGCAAGAGGCAAC---
TCTCCCAATTATGCAGGAAATCCAGCAAAT
Allig_mississip
GGCCCTCCAGACAATTCCCCGATTCAA-----ACCAAT
Allig_sinensis
GGCCCTCCAGACAATTCCCCGATTCAA-----ACCAAT
Gharial
GGCCCTCCAGACAATTCCCTGATTCAA-----GCCAAT
Crocodilus_nilo
GGCCCTCCAGACAAGTCCTTGATTCAA-----GCCAAT
Crocodilus_poro
GGCCCTCCAGACAAGTCCTTGATTCAA-----GCCAAT

Aspidoscelis
 GCTTATGGAGAGACTATC-----AAT
 Shinisaurus
 GGTTATGGAGAGGACTCC-----AAC
 Ophisaurus
 GGTTATGCAGAGAACTCC-----ATC
 Anolis
 GGTAATGGTTGGAATTCT-----AAT
 Eublepharis
 GGTTACGGAGATAACTCC-----AAT
 MournGekko
 GGTTATGGGGAGAGCTCC-----AAT
 Gekko_japon
 GGTTATGGGGAGAGCTCC-----AAT
 Python
 GTTTATGGAGGCAATTCA-----ATT
 Boa_constrictor
 GTTTATGGAGACAATTCA-----ATT
 Vipera
 GTTTATAGAGACAATTCA-----GTT
 Protobothrops
 GTTTATAGAGACAATTCA-----GTT
 Croc_horrid
 GTTTATAGAGACAATTCA-----GTT
 Croc_mitch
 GTTTATAGAGACAATTCA-----GTT
 Thamnophis
 GTTTATAGAGACAATTTA-----GTT
 Cobra
 GTTTATAGAGACAATTCA-----GTT
 Pantherophis
 ATTTATAGAGACAATTCA-----GTT
 Pogona
 GGCTATAGAGACAATTG-----GAC

 Ornithorhynchus
 CTCCGGAAGAACCCCAGGCCCA-----
 Monodelphis
 AACAGAAGAAAACCCCAGGGTCCA-----
 Mus_musculus
 TTCGGAAGAAACCTGCCAGGGCCAAATAAACCCTTTGTGGGAGCCAATCCGGCCTCAAAT
 Rattus
 TTCGGAAGAAAACCTGCCAGGGCCAAAAAACCCTTTATGGGAGCCAATCCAGCTTCAAAC
 Cavia
 TTCAGAAGAAAGCTTCAAGGGCCA-----
 Homo
 CTCAGAAGAAAGCCTCAGGGGCCA-----

Equus
ATCAGAAGAAAGCCTCAGGGGCCG-----
Ursus
TTCAGAAGAAAGCCTCAGGGACCA-----
Bos
TTCAGAAGAAAGCCTGAGGGGCC-----
Sus
CTCAGAAGAAAGCCTGAGGGGCCA-----
Tursiops
TTCAGAAGAAAGCCTGAAGGGCCA-----
Allig_mississip
CGAAGAGGAGACCTCCAGAGCAGA-----
Allig_sinensis
CGAAGAGGAGACCTCCAGAGCAGA-----
Gharial
CGAAGAGGAAACCTCCAGAGCAAA-----
Crocodilus_nilo
CGAAGAGGAAACCTCCAGAGCAAA-----
Crocodilus_poro
CGAAGAGGAAACCTCCAGAGCAAA-----
Aspidoscelis
CACAGAGAAGGTCCACAGAATGCC-----
Shinisaurus
CACAGAGGTAATCTTCATAATACA-----
Ophisaurus
CACAGAGGTAATCTCCAGAATACC-----
Anolis
CACAGAGGTAATATCCAAAACACA-----
Eublepharis
CAGAGGGGCAATCTCCAGAACATC-----
MournGekko
CAGAGAGGCAATCTCCAGGACATA-----
Gekko_japon
CAGAGAGGCAATCTCCAGGACATA-----
Python
CACAGAGATAATCTTCAGAGAATT-----
Boa_constrictor
CACAGAGATAATCTTCAGAGAATT-----
Vipera
CACAGAACTGATCTGCAGAGAATT-----
Protobothrops
CACAGAACTAATCTGCAGAGAATT-----
Crot_horrid
CACAGAACTAATCTGCAGAGAATG-----
Crot_mitch
CACAGAACTAATCTGCAGAGAATT-----
Thamnophis

CATAGAGCTAATCTCCAGAGAATT-----

Cobra

CACAGAGCTAACCTGCAGAGAATT-----

Pantherophis

CATAGAGCTAATCTGCAAAGAATT-----

Pogona

CCCAGAGGTAATCTCCAAAGTACA-----

Ornithorhynchus

Monodelphis

Mus_musculus

AAACCCTTTGTGGGAGCCAATCCGGCCTCAAACAAACCCTTTGTGGGAGCTAATCCGGCC

Rattus

AAACCCTTTGTGGGAGCCAATCCAGCTTCAAACAAACCCTTTGTGGGAACCAATCCAGCC

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Allig_mississip

Allig_sinensis

Gharial

Crocodilus_nilo

Crocodilus_poro

Aspidoscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MournGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

Monodelphis

Mus_musculus

TCAAACAAACCCTTTGTGGGAGCCAATCCGGCCTCAAATAAACCCCTTTGTGGGAGCCAAT

Rattus

TCAAACAAACCCTTTGTGGGAGCCAATCCAGCCTCAAACAAACCCTTTGTGGGAGCCAAT

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Allig_mississip

Allig_sinensis

Gharial

Crocodilus_nilo

Crocodilus_poro

Aspidoscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MournGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

Monodelphis

Mus_musculus

CCGGCCTCAAATAAACCCCTATGTGGGAGCCAATCCGGCCTCAAACAAACCCTTTATAGGA

Rattus

CCAGCCTCAAACAAACCCTTTGTGGGAGCCAATCCAGCCTCAAACAAACCCTTTGTGGGA

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Allig_mississip

Allig_sinensis

Gharial

Crocodylus_nilo

Crocodylus_poro

Aspidocheilus

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MourningGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

Monodelphis

Mus_musculus

GCCAATCCGGCTGCAAACAAACCATCTATAGGAACCAATCCAGCCGCAAACAAACCATCT

Rattus

GCCAACCCAGCCTCAAACAAACCCTTTATGGGCACCAATCCTGCTGCAAATAAACCATCT

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Allig_mississip

Allig_sinensis

Gharial

Crocodylus_nilo

Crocodylus_poro

Aspiloscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MournGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

Monodelphis

Mus_musculus

ATAGGAACCAATCCAGCTGCAAATAAACCTTTGTGAGAAACAATGTAGGT-----

Rattus
ATAGGAACCAATGCAGCCTCAAACAAACCATTTGTGGGAACCAATGCAGGTACAAATAAA
Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Allig_mississip

Allig_sinensis

Gharial

Crocodylus_nilo

Crocodylus_poro

Aspidocheilus

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MourningGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

Monodelphis

Mus_musculus

-----GCA

Rattus

CCGTTTATGGGAATCAATGTTGCCTCAAATAAACCTTTATGGGAACCAATCCGGCCTCA

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Allig_mississip

Allig_sinensis

Gharial

Crocodylus_nilo

Crocodylus_poro

Aspidoscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MournGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

Monodelphis

Mus_musculus

AATAAACCCCTTTGTGGGAACCAATCCCTCCTCAAACCAACCATTTCTGAGAAGCAATCAG

Rattus

AATAAACCCCTTTGTGGGAACCAATCCAGCCTCAAATAAACCATTTGTGAGAAGCAATCAT

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Allig_mississip

Allig_sinensis

Gharial

Crocodylus_nilo

Crocodylus_poro

Aspidocheilus

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MourningGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

GCCAAGCACCCCGGAGAGGCC

Monodelphis

ACCAAACAACCTGAAGAAATA

Mus_musculus

GCCTCAAATAAACCATTTATGAGAAGCAATCAGGCCTCAAATAAACCATTTGTGGGCACC

Rattus

GCCTCAAATAAACCATTTGTAGGAGCCAATGCTGCTTCAAATAAACCATTTGTGGGAACC

Cavia

AACAAACCTTTTGTGGGGACC

Homo

AATAAACACCCTGTAGGAACT

Equus

AATAAACCTCCTGTGGTAACC

Ursus

AATAAACACCCTGTGGGAACC

Bos

AGTAAACAACCTGAGGGAACCT

Sus

AATAAGAACCCTATGGTAACC

Tursiops

AATAAACACCCTGTGGGAACC

Allig_mississip

CCCAGC-----

Allig_sinensis

CCCAGC-----

Gharial

CCCAGC-----

Crocodilus_nilo

CCCAGC-----

Crocodilus_poro

CCCAGC-----

Aspidoscelis

AACAGC-----

Shinisaurus

AACATC-----

Ophisaurus

AATATC-----

Anolis

AATGTC-----

Eublepharis -----
 AACACAAC-----AAC
 MournGekko -----
 AACAGCAAC-----AAC
 Gekko_japon -----
 AACAGCAAC-----AAC
 Python -----
 AACAGT-----
 Boa_constrictor -----
 AATAGT-----
 Vipera -----
 AACAGT-----
 Protobothrops -----
 AACAGT-----
 Croc_horrid -----
 AACAGT-----
 Croc_mitch -----
 AACAGT-----
 Thamnophis -----
 AACAGT-----
 Cobra -----
 AACAGT-----
 Pantherophis -----
 AACAGAGAA-----TTA
 Pogona -----
 AACAGT-----

Ornithorhynchus
 AACAGCGGGCCGGTGTATTCCCAGCGCGGGCTCATGGCCCCAGGGAGCCAGTCGCA
 Monodelphis AATGGTGGGTTAGCA---
 GGTCCCAAGCTTGGCACTGCCATAAAGAGGAGCAGATTCAA
 Mus_musculus AATGTGGCCTCAGTG---
 GGTCCCTAACAGGTCAGTGTAGCCACAATATGAAAACCTCAA
 Rattus AATGTGCCCTCAGTG---
 GGTCCCTAACAGGTTACTGTTAGCCACAATATGAAAACCCAA
 Cavia AATGTTACCCCAATG---
 AGTCCCAAACAAGGTACTATTGGCCGCAATGAAAAGATCCAA
 Homo ACTGTTGCCCCACTG---
 GGTCCCAAACCTGGCCCTGTTGTTTCGCAATGAAAAAATCCAA
 Equus AATGTT---CCTCTG---
 GGTCCCAAACATGATACTGTTGACCTCAACGAAAAAGTCCAA
 Ursus AATGTTGCTCCTCTG---
 AGTCCCAAACAGGGTACGGTTGTCCACAATGAAAAAATCCAA
 Bos ---ATTGCCCTCTG---
 GGTCCCAAACATGGTACTACTGGCCACAATGAAAACATCCAA
 Sus AATGTTGCTCCTCCA---
 GGTCCCAAACATGGTACTGTTGACCAAAATGAAAACATCCAA

Tursiops AATGTTGCCCTCTG---
GGTCCCAAACATGGTACTGTTGGCCACAATGAAAACATCCAA
Allig_mississip AATTACCCAGCACTA---
AACCCAAGACATGGTCCATCAGGATCCGAA-----TTCCAA
Allig_sinensis AATTACCCAGCACTA---
AACCCAAGACATGGTCCATCAGGACCCGAA-----TTCCAA
Gharial AATTACCCAGCACTC---
AACCCAAGACATGGTCCATCAGGACCTGAA-----CTCCAA
Crocodilus_nilo AATTACCCAGCACTA---
AACCCAAGACATGGTCCATCAGGACCTGAA-----TTCCAG
Crocodilus_poro AATTACCCAGCACTA---
AACCCAAAACATGGTCCATCAGGACCTGAA-----TTCCAA
Aspidoscelis AATTATCCCTCAATA---
AGCAATAGACCTGAACCATATGGATACCAAAGCAAACCCGC
Shinisaurus AACCACCCCTCAACA---
GGAACAGAACCTATCCCATATGGGCAACAAGAGCAACCCCAT
Ophisaurus AACCATCCCTCAACA---
GTTTCTGGACCTAACCCCTTATGGGCAACAAGAGCATCCCCAT
Anolis AACATCCCTCAACA---
AACACAAGACATATTCCATATGGGCAACAAGAACAACCTCAT
Eublepharis AACATACCA---ATA---
AACACTAGACCTAATCCATATGGACAGCAAGAGCATCCCCAT
MournGekko AACAACCCATCAATA---
AATGCTAGACCTAACTTGTATGGACAACAAGAGCATCCCCAT
Gekko_japon AACAACCCATCAATA---
AATGCTAGACCTAACTTGTATGGACAACAAGAGCATCCCCAT
Python AATCACCCACAGTG---
AACAAATAGGCCAAACTCATATGGGCAACAAGAGGAACTCCGT
Boa_constrictor AATCATGCAACAGCA---
AACAAATAGGCCAAACTCATATGGGCAACAAGAGGAACTCCAT
Vipera AATCACCCAACAGCA---
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Protobothrops AATCACCCAACAGCA---
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Crot_horrid AATCACCCAACAGCA---
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Crot_mitch AATCACCCAACAGCA---
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Thamnophis AATCACCCAACAGCA---
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Cobra AATCACCCAACAGCA---
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Pantherophis AATTACCCACCAGCA---
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Pogona AACCAAGCCATGGCA---
AACCTAGACCTATCTCATATGGACCTCAAGAGCAGTCCCAT

Ornithorhynchus
TCCCCTCAGGAAAACCCACCGAGCCCAAGGGAGAAACCGTCCTTCCCGACCCGGGGTCCG
Monodelphis
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Mus_musculus
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Rattus
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Cavia
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Homo
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Equus
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Ursus
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Bos
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Sus
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Allig_sinensis
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Gharial
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Crocodilus_nilo
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Crocodilus_poro
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Aspidoscelis
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Shinisaurus
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Ophisaurus
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Anolis
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Eublepharis
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MournGekko
TACCAGAGAGGAACCCATCAGACCAAAGACAAATATTACCATTTTCCTAGCTCTGATCCA
Gekko_japon
TACCAGAGAGGAACCCATCAGACCAAAGACAAATATTACCATTTTCCTAGCTCTGATCCA
Python
TATCCTGGAAATAATCCATCAAGATGGAGA-----

CCTAGCTCTGGTCTGA
Boa_constrictor TATCCTGGAAATAATCCTTCAAGCTGGAGAGCT-----
AATCCTAGCTCTGGTCCA
Vipera TATCCTGGAAATAATCCATCAAGTTGGAGAGCT-----
GATCCTAACTCTGGTCCA
Protobothrops TATCCTGGAAATAATCCATCAAGTTGGAGAGCT-----
GATCCTAGCTCTGGTCCA
Crot_horrid TATCCTGGAAATAATCCATCAAGTTGGAGAGCT-----
GATCCTAGCTCTGGTCCA
Crot_mitch TATCCTGGAAATAATCCATCAAGTTGGAGAGCT-----
GATCCTAGCTCTGGTCCA
Thamnophis TATCCTGGAAATAATCCATCAAGCTGGAGAGCT-----
CATCCTAGCTCTGATCCA
Cobra TATCCTGGAAATAATCCATCAAGCTGGAGAGCT-----
CATCCTAGCTCTGATCCA
Pantherophis TATCCTGGAAATAATCCATCAAGCTGGAGAGCT-----
CATCCTAGCTCTGATCCA
Pogona
CTCCCTGGGAGAAGCCCTTCAGGCCAAAGAGAAATAATGCCTATTCTACCTCTGATCCA

Ornithorhynchus
GCCGTCCCCTGGAGGAAACCTCAGAATTACGGCCCCGGGAAGCCAGTTTACCGG-----
Monodelphis
ACCAGCACCTGGAGAAACTCACAAGGTTATGAAACCAACAAATCAAATTATAAA-----
Mus_musculus
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Rattus
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Cavia
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Homo
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Equus
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Ursus
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Bos
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Sus
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Tursiops
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Allig_mississip
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Allig_sinensis
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Gharial

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 Crocodilus_nilo
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 Crocodilus_poro
 TTGAACCAAGTGGCAAAATGCACCCTCTTATAGCAATAACAGAGCTGGCTACAAGCAAGGT
 Aspidoscelis
 AAAAATCAATGGATTAAAGATCCAGTCTACAGGGATAATGGTCTACATAACCCT-----
 Shinisaurus
 CCAGGCCAATGGAACAAAGATCCAATCTACAGGGATAATAGTCTAAATGGTTCC-----
 Ophisaurus
 CTAGGCCAATGGAACAAAGACCCAGTTTACAGAGATAATAGTCTAAATAGTTCC-----
 Anolis
 GTGGGCCAGTGGAATAAAGATCCGATCTACAGAGACAATGATCCAAAAAATTCT-----
 Eublepharis
 CAAAGCCAATGGAATAAAGATCCAGTCTACAGAGATAACAACCTTGAATAGTTTC-----
 MournGekko
 CAAAGCCAATGGAATAATGATCCAGTCTACAGGGATAACAGCCTCAATAGTTTC-----
 Gekko_japon
 CAAAGCCAATGGAATAATGATCCAGTCTACAGGGATAACAGCCTCAATAGTTTC-----
 Python
 GGACCTCAGTGGAGCAAAAACCCAGCACACGGAGATAATAAACAACCTAGTTCT-----
 Boa_constrictor
 GGACCTCAGTGGAATAGCAATCTAGCATAACAGAGATAATAAACAACCTAGTTCT-----
 Vipera
 GGACCTCAATGGAATAAAAATCCAACATATGGAGGTAATAAACAACCTAGTTCT-----
 Protobothrops
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 Croc_horrid
 GGACCTCAATGGAATAAAAATCCAACATACGGAGGTAATAAACAACCTAGTTCT-----
 Croc_mitch
 GGACCTCAATGGAATAAAAATCCAACATACGGAGGTAATAAACAACCTAGTTCT-----
 Thamnophis
 GGACCTCAGTGGAATAAGAATCCAGCATATGGACGTCATAAACAACCTAGTTCT-----
 Cobra
 GGACCTCAGTGGAATAAGAATCCAGCATATGGAGGTAATAAACAACCGAGTTCT-----
 Pantherophis
 GGATCTCAGTGGAATAGGAATCCAGCATATGGAGATAATAAACAACCTAGTTCT-----
 Pogona
 CCAAGTAGGTGGAATAAAGATCCAGTCTATAGAGATAATTATCTGCATAATTCT-----

 Ornithorhynchus CCCCCTCTCTCTGAGGGCAGACCT---
 GCGGACCCGGGACCGAGTCCCTTCGACCCACGC
 Monodelphis TTAActCCTCCACAGGGCAGCCCT---
 TCAGTACCAAGTGTCAATTCTGTTGACCAGCCT
 Mus_musculus TTGCCTCGCTCTGAGGGCAGCATG---
 GTAGGCCCAAATTTTAATTCCCTTTGATCAACAA
 Rattus TTGCCTCACCTGAGGGTAGCATG---

GTAGGCCCAAATTTTAATTCCCTTTGATCAACAA
 Cavia TGGCCTCATCCAGAGGATAACATG---
 CTAGGCCCAAATTTTAATTCTGTTAATCAATAT
 Homo CTGCCTCACTCTGAGGGTTATATG---
 CCAGTCCCAAATTTTAATTCTGTTGATCAACAT
 Equus CTGCCTCACTCTGAAGGTAACATA---
 CTAGTCCCAAATTTTAATTCTGTTGATCAACGT
 Ursus CTGCCTCACCTGAGAGTAACATG---
 CTAGTCCCAAGTTTTAATTCTATTGATCAACAT
 Bos CTGCCTCACCTGAGGGTAACATT---
 CTAGTCCCAAATTTTAATTCTATAGATCAACAT
 Sus CTGCCTCAGCCGGAGGATAACATG---
 CTAGTCCCAAATTTTAATTCTATTGATCAACGT
 Tursiops CTGCCTCACCTGAGGACAACATG---
 CTAGTCCCAAATTTTAATTCTATTGGTCAACGT
 Allig_mississip ATCATCCTTCCTGACAGCAAACCT---
 CCGGCTCCTACCTTTAACACCGTAGGAACAAAC
 Allig_sinensis ATCATCCTTCCTGACAGCAAGCCT---
 CCGGCTCCTACCTTTAACACCATAGGAACAAAC
 Gharial ATCATCCTTCCTGACAGCAAACCT---
 CCGGCTCCTACCTTTAACACCATAGGAACAAAT
 Crocodilus_nilo ACCATCCTTCCTGACAGCAAGCCT---
 CTGGCTCCTACCTTTAACACCATAGGAACAAAT
 Crocodilus_poro ACCATCCTTCCTGACAGCAAGCCT---
 CTGGCTCCTACCTTTAACACCATAGGAACAAAT
 Aspidoscelis -----CCACCAGAAGGTCATTCC---CTGGATCCA-----
 CCATTAAGGGAAACT
 Shinisaurus -----CCACCTGAAGGTCATTCC---
 CTGGATCCACAGTTTAATACATTAGAACGAGCT
 Ophisaurus -----CCACCTGAAGGCCACTCC---
 CTGGATCCACAGTTTAATACACTAGGACGACCT
 Anolis -----CCACCTGAAGGCCATCCT---
 CTGGACCCACAGTTTAAGACAATG---AGAATT
 Eublepharis -----CCACCGGAAGGCCATTCC---
 ATGGATCCACAGTTCAATACATTAGGACAAGCT
 MournGekko -----
 CCACCTGAAGGCACTTCAGGCGTGGATGCACAGTTCAATACATTAGGACAAGCT
 Gekko_japon -----
 CCACCTGAAGGCACTTCAGGCGTGGATGCACAGTTCAATACATTAGGACAAGCT
 Python -----CCATCAGAAAGCCATTCT---
 CTG-----
 Boa_constrictor -----CCATCAGAAAGCCATTCT---
 CTG-----
 Vipera -----CCATTAGAAAGTCATTCT---
 CTA-----
 Protobothrops -----CCATTAGAAAGTCATTCT---
 CTA-----

Croc_horrid -----CCATTAGAAAGTCATTCT---
 CTA-----
 Croc_mitch -----CCATTACAAAGTCATTCT---
 CTA-----
 Thamnophis -----CCACCAGAAAGCCATTCT---
 CTG-----
 Cobra -----CCATCAGAAAGCCATTCT---
 GTG-----
 Pantherophis -----CCACCAGAAGGCCATTCT---
 CTG-----
 Pogona -----CCACCTGAAGGCCATTCC---
 GTGGATCCACAGATTAATACATTAAGG-----

Ornithorhynchus
 GAAAACCCCTACTACCCAAGAGGAGATGCCACCGATAGAAGATTTCTGTCTTCGGGAGGC
 Monodelphis GAAAAT---TATTACCCCAGGGTAGATTCC-----
 AGGAGATTCCCAGCTAGT-----
 Mus_musculus GAAAACCTACTTCTCAAAGGAGCTTCC-----
 AAAAGAGTACCAAGTCCTAATATA
 Rattus GAAAACACCTACTTCTCAAGAGGAGATTCC-----
 AGAAAAGTAGCAAGTCCTAATAGA
 Cavia GAAAATTCCTATTACCCAAGAGGAGAAGTC-----
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 Homo GAAAACCTCTATTACCCAAGAGGAGATTCC-----
 AGAAAAGTCCCAAATTCTGATGGA
 Equus GAAAACCTTACTACCCAAGAGGAGATATC-----
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 Ursus GAAAACCTTATTACCCAAGAGGAGATTCC-----
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 Bos GAAAACCTTATTACCCCAGAGGAGATTCC-----
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 Sus GAAAACCTTATTACCCAAGAGGGGAGTCC-----
 AAAAGAGCCCCAAATTCTGATGGA
 Tursiops GAAAACCTTATTACCTGAGAGGAGATTCC-----
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 Allig_mississip GAGCACACACAGCATTCACAGGACGATGCT-----
 AGTAGAATCCCTGCTTCTGGGCTG
 Allig_sinensis GAGCGCACACAGCATCCACAGGACGATGCT-----
 AGTAGAATCCCTGCTTCTGGGCTG
 Gharial GAGCACACACATCATCCACAGGAAGATGCT-----
 AATAGAATCCCTGCTTCTGGGCTG
 Crocodilus_nilo GAGCACACACATCATCCACAGGAAGATGCT-----
 AATAAAATCCCTGCTTCTGGGCTG
 Crocodilus_poro GAGCACACACATCATCCACAGGAAGATGCT-----
 AATAGAATCCCTGCTTCTGGGCTG
 Aspidoscelis GAGAATGTCTTTAATGCAAAAGAAAATATA-----
 GATCCATCTAAGCCTTCTAGAATG

Shinisaurus GAGAATGTCTATAATGCAAGAGAAGGCTTT-----
GATAGGTTTCAGCCTTCTGGAATG
Ophisaurus GAGAATGCCTATAATGCAAGAGAAGAATTT-----
GATAGGTTTCAGCCATCTGGAATG
Anolis GATAACATCTATAATGCAAGACAGGATGCT-----
GAAAGATTCCAGCCTTCTGGAATG
Eublepharis GAGAACTCCTATAACACCAGGAAAGAGACA-----
GATCTGTTCCAACCTTCTGGGGTG
MournGekko GAGAACTCCTATAATATCAGGAAAGACACA-----
GATCAGTTCCAGCCTTCTGGAATG
Gekko_japon GAGAACTCCTATAATATCAGGAAAGACACA-----
GATCAGTTCCAGCCTTCTGGAATG
Python -----TACCAAGTAGAAGAAAAGACT-----
GGTATGTATCAGCCTTCTAGAATG
Boa_constrictor -----TACAAAGTAGAAGAAAACACT-----
GATATGTATCACCTTCTAGAATG
Vipera -----AAGAAAGTAGAAGAAAACAGT-----
GATATGTATCATCCTTCTAGAAAA
Protobothrops -----AAGAAAGTAGAAGAAAACAGT-----
GATATGTATCATCCTTCTAGAAAA
Crot_horrid -----AAGAAAGTAGAAGAAAACAGT-----
GATTTGTATCATCCTTCTAGAAAA
Crot_mitch -----AAGAAAGTAGAAGAAAACAGT-----
GATATGTATCATCCTTCTAGAAAA
Thamnophis -----AACAAAGTGGAAGAAAACAGT-----
GATTGGTATCATCCTTCTAGAAAA
Cobra -----AACAACTGGAAGAAAACACT-----
GATAGGTATCATCCTTCTAGAAAA
Pantherophis -----AACAAAGTGGAAGAAAACACG-----
GATAGGTATCATCCTTCTAGAAAA
Pogona -----
CGACCTTCTGGGATG

Ornithorhynchus
TCGGCCCCTGGCCGCCATTTCCCCGAGGGTATTGTTTTGAAGCCA-----
Monodelphis ---
ATTCAAGCATCAAATTTTCCCAAAGGAATAGTTTCAGAACCAAGAAAAGGTCCCTCT
Mus_musculus
CAAATCCAAAGCCAGAATTTGCCCAAAGGAATTGCTTTAGAGCCAAGAAGAACCCCATTT
Rattus
CAAATCCAAAGTCAGAATTTGCCCAAAGGAATTGCTTTAGAGCCAAGAAGAACCCCATTT
Cavia
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Homo
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Equus
CAAACCTCAAAGCCAGAATTTGCCCAAAGGGATTATTTTAGAGCCAAGAAGAATCCCATAT

Ursus

CAAACCCAAACCCAGAATTTGCCCAAAGGGATTATTTTGGAGCCAAGAAGAACCATAT

Bos

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Sus

CAAACCCAAACCCAGATTATTCCCAAAGGGATTGTTTTAGAGCCAAGAAGAATCCCATAT

Tursiops

CAAACCCAAAGCCAGAATTTGCTCAAAGGGATTATTTTAGAGCCAAGAAGAATTCCATAT

Allig_mississip

CAGCTGACCAGCCAAGCCACTCCAAAGGGAGTATTCTTGGATGCAAGGAGACATCCATCT

Allig_sinensis

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Gharial

CAGCTGACCAGCCAACCCACTCCAAAGGGAGTATTCTTGGATGCAAGGAGACATCCATCT

Crocodylus_nilo

CAGCTGACCAGCCAACCCACTCCAAAGGGAGTATTCTTGGATGCAAGGAGACATCCATCT

Crocodylus_poro

CAGCTGACCAGCCAACCCACTCCGAAGGGAGTATTCTTGGATGCAAGGAGACATCCATCT

Aspidoscelis

CATCAGTCAAATACACGTTCTCACTGGGATACATTTTCAGCCACAAGTATGACTCCATTT

Shinisaurus

CACCAATCAAGCACATTTTCCCATCGGGGAGTATTTTCAGCCACAAGCAGAACTCCATTA

Ophisaurus

CACCGATCAAACACACTTTCCCATCAGGGAGTATTTTCAGCCACAAGGAGAACTCCATTT

Anolis

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Eublepharis

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MournGekko

CACCAACTGAGCTCACTTCCCCCTCAAGGAGTATTTTTGCCACAAAAAGAACTTTGTCT

Gekko_japon

CACCAACTGAGCTCACTTCCCCCTCAAGGAGTATTTTTGCCACAAAAAGAACTTTGTCT

Python

CAACAGTCAAATGGACTTTCCCATCAAGAAATAGTTTTGGATACAAGGGGAACTCCATTT

Boa_constrictor

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Vipera

CAACAGTCAAATGGCCAATTCCATCAAGAAACATTTTTGGATACAAGGGGAATTCCATTT

Protobothrops

CAACAGTCAAATGGTCAATTCCATCAAGAAACATTTTTGGATACAAGGGGAATTCCATTT

Crot_horrid

CAACAGTCAAATGGTCAATTCCATCAAGAAACATTTTTGGATACAAGGGGAATTCCATTT

Crot_mitch

CAACAGTCAAATAGTCAATTCCATCAAGAAACATTTTTGGATACAAGGGGAATTCCATTT

Thamnophis

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Cobra

CAACAATCAAATGGTCAATCCCATCATGACATATTTTTGGATAACAAGGGAACTCCATTT
Pantherophis
CAACAGACAAACAGTCAATCCCATCAAGACCTATTTTCGGATAACAAGGGAACTCCATTT
Pogona
CAACAGCCAAATATACTTTCCGAGCAGGAAATATTTCCATCCACAAAAGAACTCCATTT

Ornithorhynchus -----
GAAGACGACCAGCCGCCATCGAAGCAGAAGCCTTTCCATCCC---GTCACTTCG
Monodelphis
GACTCTGAAATTAATCCACCAGAAATAAACATGGAACCCACCAGACT-----
Mus_musculus
CAATCAGAACTAAAAACCTGAGTTAAACATGGTACACACCAGCCT---GCATACCCT
Rattus
GAATCAGAACTAAAAGACCTGAATTAAGCATAGTACAAACATGCCT---GTGTACCCT
Cavia
GAATCACAACCTATGCAGCCTGAATTAAGCACAGTACACACCAGCCC---ATCTATCCT
Homo
GAATCAGAACTAATCAGTCAGAATTAAGCACAGCTCATATCAGCCTGCTGTATACCCT
Equus
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Ursus
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Bos
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Sus
GAATCAGAGACTAATCAGCCAGAATTAAGCACAGTGCCTATCAGCCT---GTGTACACT
Tursiops
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Allig_mississip
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Allig_sinensis
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Gharial
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Crocodilus_nilo
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Crocodilus_poro
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Aspidoscelis
GAAACAGCAACCAATCAGCATACTGGAAAGAACGTTTCTTTATCCCT-----
Shinisaurus
GAAACAGAAACCCATCAGTATGATCGGAAGGAGCAGTCCTTTAATCAT-----
Ophisaurus
GAAACAGAAGCCCATCAGTATGATTGGAAGGAGCAGTCTTTAATCAT-----
Anolis
GAAATAGAAACCCATCAGTATGATTGGAGGGAGCAACCCTTAATCAT-----
Eublepharis

GAGGCAGAACTCATCAGTATCCGTGGAAGGAGCAGGTCTTTAATCCT-----
 MournGekko
 GAGGCAGAAACAAGCCAGTATCACTGGAAGGAGCAGGGCTTTAATTCT-----
 Gekko_japon
 GAGGCAGAAACAAGCCAGTATCACTGGAAGGAGCAGGGCTTTAATTCT-----
 Python
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 Boa_constrictor
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 Vipera
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 Protobothrops
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 Crota_mitchellii
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 Thamnophis
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 Cobra
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 Pantherophis GAAAAAGAAGCC-----
 TTTATTCAT-----
 Pogona
 GAAACAGAAACCCATTGGTATGATTGGAAGCAGCAGTTGCCCAATCCT-----

 Ornithorhynchus GAGCGGACCCCG-----
 AGAGAGCCCAGTCCCACGAAGCCC-----CAGCGGACC
 Monodelphis
 GATGAAGGTCCATATCCTCCAAAAGAATCCTTTTTTCTGAGAAGCAAT---ACATGGAAT
 Mus_musculus
 AAGAAAATCCCTTCTCCTACAAGAAAACATTTCCCTGCTGAAAGAAAT---ACCTGGAAT
 Rattus
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 Cavia
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 Homo
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 Equus
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 Ursus
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 Turssiops

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Allig_mississip -----
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Allig_sinensis -----
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Gharial -----
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Crocodilus_nilo -----
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Crocodilus_poro -----
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Aspidoscelis -----
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Shinisaurus -----
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Ophisaurus -----
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Anolis -----
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Eublepharis -----
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MournGekko -----
CCAGTTCATGAAAGAGAACAATTTCTTGTCTCCACGAAACCATGTGTGGAAC
Gekko_japon -----
CCAGTTCATGAAAGAGAACAATTTCTTGTCTCCACGAAACCATGTGTGGAAC
Python -----
CCAGATCACCAGAGAGAGAACAATTTCCATCTTCACAAAACCAAATGTGGAAC
Boa_constrictor -----
CCAGATCATCAGAGAGAGAACAACCTTCCATCTTTACAAAACCAAATGTGCAAC
Vipera -----
CCAGATCATCAGAGAGAGCAATTTCCATCTTTACAAAACCAAATGTGGAAC
Protobothrops -----
CCAGATCATCAGAGAGAGCAATTTCCATCTTTACAAAACCAAATGTGGAAT
Crot_horrid -----
CCAGATCATCAGAGAGAGCAATTTCCATCTTTACAAAACCAAATGTGGAAT
Crot_mitch -----
CCAGATCATCAGAGAGAGCAATTTCCATCTTTACAAAACCAAATGTGGAAT
Thamnophis -----
ATGGATCATCAGAAGGGACCATTTCCATCTTTACAAAACCAAATGTGGAAC
Cobra -----
CCAGATAATCAGAGAGAGAACAATTTCCATCTTTACAAAACCAAATGTGGAAC
Pantherophis -----
CCTGATCATCAGAGAGAGAACAATTTCCATCTTTACAAAACCAAATGTGGAAC
Pogona -----
CCAGATCGTGAAAGAGAACGATTTCCATCTGCACAGAACCAAATGTGGAGC

Ornithorhynchus

AGCCCGGAACCACCCCGCCCTAGAAGAAGGCCCTGGGCGGCAGGACAAGAGCCTGACG
Monodelphis
CTCCAAAAGGATCTCCAATTTTTGAGGATGAACCTACAAAACAGGAAGGATCTTTACTC
Mus_musculus
CGTCAAAAATCCTTCCACCCTTAAAGGAAGACTATGGGAGGCAAGACGAAAATTTACGT
Rattus
CACCAAAAACCCTTCCGCCCTTAAAAGAAGGCCATGGGAGGAAAGAAGAAAATTTACGT
Cavia
CACCAAGAAATCCCTCCACCCTTTAAAGAAGATCCTGGAAAGCAGGACAAACATTTACCT
Homo
CACCAAGAAATCTCTCCACCTTTTAAAGGAAGATCCAGGGAGGCAAGAAGAACATTTACCC
Equus
CACCAAGAAATCTCTCCACATTTTAAAGGAAGATCCTGGGAGGCAGGAAGAACAATTACCT
Ursus
CACCAAGAAATCTCTCCATCTTTTAAAGGAAGATCCTGGGAGGCAGGAGGAACAATTACCT
Bos
CAACAAGAAATCTCTCCACCTTTTAAAGGAAGATCCTGGAAGGAAGGAAGAACAATTACCT
Sus
CAACAAGAAATCTCTCCACCTTTTAAAGAAGATCCTGGGAGGCAGGAAGAACAATTACCT
Tursiops
CAACAAGAAATCTCTCCACCTTTTAAAGGAAGATCCTGGAAGGCATGAAGAACAATTACCT
Allig_mississip
CACCAAGAAATCTCTCCACCTTTTAAAGGAAGATCCTGGAAGGCATGAAGAACAATTACCT
Allig_sinensis
CACCAAGAAATCTCTCCACCTTTTAAAGGAAGATCCTGGAAGGCATGAAGAACAATTACCT
Gharial
CACCAAGAAATCTCTCCACCTTTTAAAGGAAGATCCTGGAAGGCATGAAGAACAATTACCT
Crocodilus_nilo
CACCAAGAAATCTCTCCACCTTTTAAAGGAAGATCCTGGAAGGCATGAAGAACAATTACCT
Crocodilus_poro
CACCAAGAAATCTCTCCACCTTTTAAAGGAAGATCCTGGAAGGCATGAAGAACAATTACCT
Aspidoscelis
AACCAGGAGGATTCACGAGTCTTCAGAGAATCCCCTTCAAGATATAACTCAATATTTTCA
Shinisaurus
AACCAGGAGGATTCACGAGGATTCACAAGAAGTTCCTCCAAGATATAATTCAATATATTTCA
Ophisaurus
AACCAGGAGGATTCACGGGGATTCAGAGAAGTTCCTCCAAGATATAACACAATGTATTCA
Anolis
AATCGGGAGGCTTCACAGTTGTTCCAAGAAGCTCCTCCAAGACAGAGCTCAATGTATTCA
Eublepharis
AAACAAGAAGAGTTGCAGGTCTTCCAAGATGATCCCCGAGGTATAACTCAAGGCATTTCG
MournGekko
AAGCAAGAGGACCTGCAGGTCTTCCAAGATGATCCTCCAAGATACAATTCAAGACATTCA
Gekko_japon
AAGCAAGAGGACCTGCAGGTCTTCCAAGATGATCCTCCAAGATACAATTCAAGACATTCA
Python
CAGAAAGATTTAGAGATAGTTCAAGAAGTTCCTCCAGGATATAATTCAAGTACCTCC

Boa_constrictor ---
 CAGAAAAAATTAGAGGTAGTTAAAGAAGCTCCTCCAAGATATAATTCAGTATACTCC
 Vipera ---
 CAGAAAGATTTAGCAATGGTTAAAGAAGCTCCTCCAGGATATAATTCAGTGTATCCC
 Protobothrops ---
 CAGAAAGATTTAGAGATGGTTAAAGAAGCTCCTCCAGGATATAATTCAGTGTATTCC
 Croc_horrid ---
 CAGAAAGATTTAGAGATGGTTAAAGAAGCTCCTCCAGGATATAATTCAGTGTATTCC
 Croc_mitch ---
 CAGAAAGATTTAGAGATGGTTAAAGAAGCTCCTCCAGGATATAATTCAGTGTATTCC
 Thamnophis ---
 CAGAAAAAATTAGAGATAGTAAAAGAACTCCTCCAGGTTATAATTCAGCGTACTCC
 Cobra ---
 CAGAAAGATTTAGAGATAGTTAAAGAACTCCTCCAGGATATAATTCAGCATACTCC
 Pantherophis ---
 CAGAAAGATTTAGAGGTAGTTAAAGGGGCTCCTCCAGGATATAACTCAGCATACTCT
 Pogona
 AGCAGAGAGAATTCACAGATATTCCAAGATGCTCCTCCAAGATATAACTCAATGTACTCA

Ornithorhynchus TACCCACCCATCAGCCCTAGGAGCGGA---
 ATTCCCTATCCTGATCAT-----CAT
 Monodelphis TATCCAGCCCTTGGAGCAAGAGAAAAT---
 GTTCCCTACCCTGAATAC-----GTG
 Mus_musculus CATCCGTCCTATGGCTCTAGAGGAAAT---
 ATTTTTTACCATGAATAT-----ACC
 Rattus CATCCTCCCTATGGCTCTAGAGGAAAT---
 GTTTTTTACCATGAATAT-----AAC
 Cavia CATGTTTCCCCGGGCTCTCAAGATAGT---
 GTTTTCTACCATAAATAT-----AAC
 Homo CATCCTTCCCATGGTTCTAGAGGAAAGT---
 GTTTTCTACCCTGAATAT-----AAC
 Equus CACCCTTCCCTTGGCTCTAGAGGAGGT---
 GTCTACTACCCTGACTAT-----TAC
 Ursus CATCCTTCTCATGGCTCTAGGGGAGGT---
 GTTTACTATCCCGACTCTTACTACCCTAAC
 Bos CATCCTTCCCTTGGCTCTAGAGGACGT---
 ATTTACTACACTGACTAC-----AAC
 Sus CATCTTTCTCATGGCTCTAGAGTACAT---
 GTTTACTACCCTGACTAT-----AAT
 Tursiops CATCCTTCCCATGGCTCTGGAGGACGT---
 GTTTATTACCCTGACTAT-----AAC
 Allig_mississip GGTGCCTTGTTTGGCCAAAGGGGAAGT---
 GTTTCCTACCCTGAATAC-----AAT
 Allig_sinensis GGTGCCTTGTTTGGCCAAAGGGGAAGT---
 GTTTCCTACCCTGAATAC-----AAT
 Gharial GGTGCCTTGTTTGGCCAAAGGGGAAGT---
 GTTTCCTACCCTGAGTAC-----AAT

Crocodilus_nilo GGTGCCTTGTTTGGCCAAAGGGGAAGT---
 GTTTCCTACCCTGAGTAC-----AAT
 Crocodilus_poro GGTGCCTTGTTTGGCCAAAGGGGAAGT---
 GTTTCCTACCCTGAGTAC-----AAT
 Aspidoscelis ACAGGTTCTTTTCATCAGAAGGGGACAT---
 GCCACCTACTCTGAAAAG-----AAC
 Shinisaurus TCAGGTTCTTTAAATCACAGGGGACAT---
 GCCACCTATACTGAAAAG-----AAT
 Ophisaurus TCAGGTTCTTTAAATCGCAGGGGACAT---
 GCTGCCTATGCTGAAAAT-----AAC
 Anolis TCTGGTTCTTTCAATCAGAGGGAAATG---
 CCCACATATTCAGGGAAA-----AAA
 Eublepharis
 TCAGGTTATTTTGGCCAGAGGTCAAACCGTATTTCCCTACCCTGAAAAG-----AGT
 MournGekko TCAGGTTATTTTGGCCAGAGGGAAACGT---
 CTTTCCTACCCCGAAAAG-----AGT
 Gekko_japon TCAGGTTATTTTGGCCAGAGGGAAACGT---
 CTTTCCTACCCCGAAAAG-----AGT
 Python TCAGGTTCTTTTCATCAGAGGGGACAT---
 GATACTTATGCTGATAAG-----AAT
 Boa_constrictor TTGGGTTCTTTTCATCAGCAGGGGACAT---
 ACTACTTATGCTGATAAG-----AAT
 Vipera CCAGGTTCTTTTCATCAGAGGGGAACAT---
 GCTACTTATTCTGACAAG-----ACT
 Protobothrops CCAGATTCTTTTCATCAAAGGGGACAT---
 GCTACTTATTCTGACAAG-----AAT
 Crota_horrid CCAGATTCTTTTCATCAAAGGGGAACAT---
 GCTACTTATTCTGACAAG-----AAT
 Crota_mitch CCAGATTCTTTTCATCAAAGGGGAACAT---
 GCTACTTATTCTGACAAG-----AAT
 Thamnophis CCAGGTTCTTTTCACCAGAGGGGACAT---
 GCTACTTATTCTGATAAG-----AAT
 Cobra CCAGGTTCTTTTCATCAGAGGGGAACAT---
 GCTACTTATTCCGATAAG-----AAT
 Pantherophis CCAGATTCTTTTCATCAGAGGGGACGT---
 GCTACTTATTCCGATAAG-----AAT
 Pogona TTAGATTCTATTCATCAAAGGGGACAA---
 GAAATCTATTCTGAAAGG-----AAC

 Ornithorhynchus CCC-----
 TACGACCCCAA-----GGGACCTGG
 Monodelphis CCC-----
 TATGATCCCCAGAGGAGCTCTTTTATGCCAGAGGTAATATGTGG
 Mus_musculus AAT-----
 CCTTATCATAATGAAAATCACAGTACATTAAGCAATCCATGG
 Rattus AAT-----
 CCTTATCCTAATGAGAAATCACCGTACCTTAGAGGCAATACATGG

Cavia TCC-----
TTTTACACCAGGGAAAATTCACCATACTGGGAGCAACACATGG
Homo CCA-----
TATGATCCCAGGGAAAACCTCACCATACTTAGAGGCAATACATGG
Equus CCC-----
TATGATCCCAGGGAAAACCTCACCATACTTAGAGGCAATGCATGG
Ursus TCT-----
TATGATCCCAGGGAAAACCTCACCCTAGAACCAATACGTGG
Bos CCC-----
TATGACCGCAGGGAAAACCCACCATACTTAGAAGTAATAGCTGG
Sus CCC-----
TATGATCCTAGGGAAAATTCACCATACTTAGAAGCAATACATGG
Tursiops CCC-----
TATGATCCCAGGGAAAACCTCACCATACTTAGAAGTAATACATGG
Allig_mississip TCC-----
TTTAACCAAAGGGGAATTCCTCCTCAGGGCAGTGCATGG
Allig_sinensis TCC-----
TTTAACCAAAGGGGAATTCCTCCTCAGGGCAGTGCATGG
Gharial TCC-----
TTTAATCAGAAGGGGAATTCCTCCTCAGGACAGTGCATGG
Crocodilus_nilo TCC-----
TTTAATCAGAAGGGGAATTCCTCCTCAGGACAGTGCATGG
Crocodilus_poro TCC-----
TTTAATCAGAAGGGGAATTCCTCCTCAGGACAGTGCATGG
Aspidoscelis TCT-----
TATGGTCAACGTTCCCAATCATTTTATCCC-----AGCCCATGG
Shinisaurus TCT-----
TATGGCCAACACACCATTTCCTTTTTTCCC-----AGAGCATGG
Ophisaurus TCT-----
TATGGCCAACATAACCAGTCCCTTTTCCCC-----AGCACATGG
Anolis TCC-----
TATAATCAATATACCCATCCCTTCCCTCCT-----AGAGCATGG
Eublepharis TCC-----
TATGACCAACCTCCCCGATCCTTTTATCCT-----GAAACATGG
MournGekko TCC-----
TATGCCCAACCTCCCCGTTCCCTTTTATCCT-----GATACATGG
Gekko_japon TCC-----
TATGCCCAACCTCCCCGTTCCCTTTTATCCT-----GATACATGG
Python TTT-----
TATAGCCAACAAACACCTTCTTTTTATCCC-----AGAGCATGG
Boa_constrictor TCT-----
TACAGCCAACAAACTCCTTCTTTTTATCCC-----AGAGCATGG
Vipera TTT-----
TACAGCCAGCAAGCTCCTTCCCTTTTATCCC-----AGAGCATGG
Protobothrops TTT-----
TACAGCCAGCAAGCTCCTTCCCTTTTATCCT-----AGAGCATGG
Crot_horrid TTT-----

TACAGCCAGCAAGCTCCTTCTTTTATCCT-----AGAGCATGG
Crot_mitch TTT-----
TACAGCCAGCAAGCTCCTTCTTTTATCCT-----AGAGCATGG
Thamnophis TCT-----
TACAGGGAAGAAGCTCCTTCTTTCATCCC-----AGATTTTGG
Cobra TCT-----
TACAGGCAGCAAGCTCCTTCTTTTATCCC-----AGATTTTGG
Pantherophis TCT-----
TACAGGCAGCAAGCTCCTTCTTTCATCCC-----AGATTTTGG
Pogona
TCTTTCAGAAATCCCTACCAACAAAATGGTCATCCCAGTACTTCC-----AGGACATGG

Ornithorhynchus

GACGAAGGCAACGAGCCAACCTCCTTCTCGGGCCAGCGGAGCAACCAGGGAGACAACCG
Monodelphis
GATGAAGGAGATGAGTTTCTGGCACTTTCAGACCAGCAGGTCAACCAGGAAATCCATTG
Mus_musculus GATAAG-----AGCTCTCCAGTACTATG-----
ATGCGGCCAGAAAACCCACAG
Rattus GATAAGAGGATCAGCACTCCCGGTACTATG-----
ATGCAACCAGAAAATCCACAG
Cavia GAGAAGAGAGCTGATTCTCCAAAACA-----
CAAGCAAAAATCCACAG
Homo GATGAGAGAGATGATTCTCCCAATACTATG-----
GGGCAAAAAGAAAGTCCACTC
Equus GATGAGAGAAATTATTCTCCCAATACTATG-----
GGGCGACTCAAAAATCCACTG
Ursus GATGAAAGAGATGATTCTCCCAATAATATA-----
GGGCAACCCAAAATTCGCTG
Bos GATGAAAGAAATGATCCTCCCAATACAATG-----
GGGCAATCTGAAAATCCACAC
Sus TATGAAAGAGATGATTCTCCCAATACCATG-----
GGGCAACCTGAAAATCCACAC
Tursiops GCTGAAAGAGATGATTCTCCCAATGCAATG-----
AGGCAACCTGAAAATCCACAC
Allig_mississip GAAACTCTCCTGTGAGC-----
CCAGCAGGACAACGTGGAAACCCCTG
Allig_sinensis GAAACTCTCCTGTGAGC-----
CCAGCAGGACAACGTGGAAACCCCTG
Gharial GAAACTCTCCTGTGAGC-----
CCAGCAGGACAACGTGGAAGCCACCTG
Crocodilus_nilo GAAACTCTCCTGTGAGC-----
CCAGAAGGACAACGTGGAAATTCCTG
Crocodilus_poro GAAACTCTCCTGTGAGC-----
CCAGAAGGACAACGTGGAAATTCCTG
Aspidoscelis GAGGATAGAGAAAGTTCTCCC---
ACAGTAGGTCCAGCAGACCAAAGAGAAAGACATTCA
Shinisaurus GAAGATGGGGAAAATCGCCA---

ACAATGGGCCACCAGTCCAAAGGGAAAGTCCATCA
Ophisaurus GAGGATAGGGAAAGCTCTCCA---
ACATTGGGCTCACAGGTCCAAAGGGAAAGTCCATCA
Anolis GAGGACAGAGAACTCTCCC---
ACAATTAGTCCATCAGACCAAAGGGAAAGTTCACCA
Eublepharis GAGGGGAGAGAAAAGTCTCCC---
ACACTTGGCCCTGCTGGCCAAAAGGAACGCCCGTTC
MournGekko GAAGGGAGAGAAAGCTCTCCC---
ACACTTGGTCCTGCTGGCCAGAGGGAACACCCTTTA
Gekko_japon GAAGGGAGAGAAAGCTCTCCC---
ACACTTGGTCCTGCTGGCCAGAGGGAACACCCTTTA
Python GAAGACAAAGAGAACTTGCCC---
ACAATACAGCCTCTAGGGCAAAGGGAAAGGCCATAT
Boa_constrictor GAAGACAAGGAGAACTTGCCC---
ACAACAGAGCCTCTAGGGCAAAGGGAAAGGCCATTT
Vipera GATGACAAAGAGAACTTGCCCT---
ACAATAGAACCTCTGGGGCAA-----AGAGGCTCT
Protobothrops GATGACAAAGAGAACTTGCCCT---
ACAATAGAGCCTCTGGGGCAA-----AGAGGCTCT
Crot_horrid GATGACAAACAGAACTTGCCCT---
ACAACAGAGCCTCTGGGGCAA-----AGAGGCTCT
Crot_mitch GATGACAAACAGAACTTGCCCT---
ACAACAGAGCCTCTGGGGCAA-----AGAGGCTCT
Thamnophis GATGACAAAGAGAAATTTGCCA---
ACAGTAGAGCCTCTAGGGCAAAGAGAAAGACCATCT
Cobra GTTGACAAAGAGAAATTTCCCT---
ACAATAGAGCATCTAGGGCAAAGAGAAAGGCCATCT
Pantherophis GAGGACGAAGAGAACTTGCCCT---
ACAATAGAGCCTCCAGGGCAAAGAGAAAGGCCATCT
Pogona GAGGAGAGGAAAGACTCTCCT---
GTAAC TGGCTCAACAGGTCAAAGGGAAAGACTATCA

Ornithorhynchus

TCTCCCTGTAGCCCTCGGATGGGCCAGAGAGGTGAAGTGCCCTACAACGAAGAGGACCCT

Monodelphis

CACTCCCTGAATTCTCCTTCAGGTCAGAGACATCGGTCAACTGACAATGAAGAGGATCCA

Mus_musculus TACACCATGACTTCTCTA---

GACCAGAAGGAGACAGAGCAGTACAATGAAGAGGATCCA

Rattus TATACCATGTCTTCTCTA---

GACCAGAAGGAAACAGAGCAGTACAATGAAGAGGACCCA

Cavia TATCCTCTGAAGAATACA---

GATCAGAAAGAGACCATCCAGTATAATGAAAAGGACCCA

Homo TACCCATAAATACCCA---

GACCAGAAGGAGATAGTCCCTTATAATGAAGAGGACCCA

Equus TACCCCGTGAATACTCCA---

GATGTGAAAGAGACAGTCCTTTATAATGAAGAGGACCCA

Ursus TACCCTATAAATACTCCA---

Pantherophis

TATTCGCCCTTTTCACCTTCATATCAAATGCACAGGAGCGAATATCATGGAAGC-----

Pogona

TATTCTCCAATATTGCCTTCAAATCAGATGCAGAAGAACCACTATCATAGAAGT-----

Ornithorhynchus GTTGACCCACGGGAGATGAACCTAAC---

CTTGGGCCAGGTCCCTGGGAA---GAGACG

Monodelphis ATTGACCCAACGGGTGATGAGTTTTAC---

CGGGGACCTGATGCAGGGGGT---AAGGAA

Mus_musculus ATTGATCCAAATGAAGATGAATCTTTT---

CCAGGACAAAGTAGATGGGGGGATGAAGAG

Rattus ATTGATCCAAATGAAGATGAATCTTTT---

CCAGGACAAAGTAGATGGGGTGTGACGAG

Cavia TCTGATCCAACCAGACACGGGCCCTTT---

CCAGGACTAAGTAGGTGGGGTGTGAGGAAGTG

Homo GTTGATCCAACCTGGAGATGAAGTCTTT---

CCTGGACAAAATAGATGGGGT---GAAGAG

Equus ACTGATCCAACCTGGAGGTGAAGCTTTC---

CCAGGACAAAGTAGATGGGGTGTGGAGGAG

Ursus CTTGATCCAACCTGGAGATGAATCTTTC---

CCAGGACAAAGTAGATGGGGTATGGAGGAG

Bos GCTGATCCAACCTGGAGATGAACTTTC---

CCAGGACAAACGAGATGGAGTGTAGATGAG

Sus ATTGATCCAACCTGGAGATGAACATTTC---

CCAGGACAAAGTAGATGGGATATGGAGGAG

Tursiops ATAGAGCCAACCTGGAGATGAATCTTTT---

CCAGGACAAAGTAGATGGAGTGTGGCGGAG

Allig_mississip TTTGATCAGCTAGGACCTGACTCTTAC---

CCTGGACAAAGGACATGGGACCAGGAGCAG

Allig_sinensis TTTGATCAGCTAGGACCTGACTCTTAC---

CCTGGACAAAGGACATGGGACCAGGAGCAG

Gharial TTTGATCAGCTAGGACCTGACTCTTAC---

CCTAGACAAAGGATATGGGACCAGGAGCAG

Crocodilus_nilo TTTGATCAGCTAAGACCTGACTCTTAC---

CCTAGACAAAGGACATGGGACCAGGAGCAG

Crocodilus_poro TTTGATCAGCTAAGACCTGACTCTTAC---

CCTAGACAAAGGACATGGGACCAGGAGCAG

Aspidoscelis ---ATTCCATTGCAGCATGAACTATAT---

CACAAGCAGCATCCATGGACTGATGAGAAA

Shinisaurus ---GCTCAGCAGGAACATGAACCATAT---

GCCAGGCAAACCTAAGGACCCATGAAAAC

Ophisaurus ---ATGCAGCAGGAACATGAACCATAT---

TCCAGGCAAATCTATGGACCCATGAAAAC

Anolis ---ATACAGCCAGAGTATGAACCATAT---

CCCAGGCAAGATCCATGGACCCGTGAACAA

Eublepharis GTTGTTTCAGCAGGAGAGCGAAATGTAT---

CCTAGGCCATCTCCATGGGCACAGGAGAAA

MournGekko ---NNNNNNNNNNNNNNNNNNNNNNNTAT---
CCCAGGCAAACCTCCATGGGCCCATGAAAAA
Gekko_japon ---NNNNNNNNNNNNNNNNNNNNNNNTAT---
CCCAGGCAAACCTCCATGGGCCCATGAAAAA
Python ---
ATTCAGCAGGAGCATGAATTTTCATCAATCCAGGCAAATATATGGCCCCATGAAAAA
Boa_constrictor ---ATTCAGCAGGAGCATGAACTATAT---
TCCAGGCAAATATATGGGCCCATGAAAAG
Vipera ---ATTCAGCAGGAGAATGAACCATAT---
TCCAGGCAAATATATGGGCCCATGAAAAA
Protobothrops ---ATTCAGCAGGAGAATGAACTATAT---
TCCAGGCAAATATATGGGCCCATGAAAAA
Crot_horrid ---ATTCAGCAGGAGAATGAACTATAT---
TCCAGGCAAATATATGGGCCCATGAAAAA
Crot_mitch ---ATTCAGCAGGAGAATGAACTATAT---
TCCAGGCAAATATATGGGCCCATGAAAAA
Thamnophis ---ATTCAACAGGAGAATGAATTATAT---
TCCAGGCAAATATATGGCCCCAGGAAAAA
Cobra ---ATTCAGCAGGAGAATGAATTATAT---
TCCAGGCAAATATACAGCCCCATGAAAAA
Pantherophis ---ATTCAGCAGGAGAATGAATTATAT---
TCCAGGCAAATATATGGGCCCATGAAAAA
Pogona ---GTTTCAGCAGGAGCATGAAGCACAC---
CCCAACCAAACCCATGGGTTCGATGAAAAG

Ornithorhynchus GCCAACGGCAAAGAAGAT-----
CCCAGTAGATACCACAAAAGCCCGCAGTACCCCAA
Monodelphis TCCAACCTCAAAGGAAGT-----
CAAGTTAGGTACCGTGAAAGATACCCATATGCCCCC
Mus_musculus ATGAACTTCAAAGGAAAC---
CCAACAGTTAGGCAGTATGAAGGTGAGCACTAC-----
Rattus CTGAGCTTCAAAGGAAAC---
CCAACACTTAGGCAGTATGAAGGTGAGCAATAC-----
Cavia TTGAGCTTTAATGAAAGG---
CCCATGGGAAGGCACAATGATGGTAAGCAGTAT-----
Homo TTGAGCTTCAAAGGAGGC---
CCAACAGTTAGGCACTATGAAGGTGAACAATAT-----
Equus TCAAGCCTTAAACAAGGC---
CCAACAGTTAGGCACTATGAGGGCGAGCAATAT-----
Ursus ACAAGCTTTAAAGAAGGT---
CCAACAGTTAGGCACTATGAAGGGGAGCAATAT-----
Bos TCGAACTTTAAGACAGCC---CCAACAGCTAGG---
TATGAAGGCAAGCAATAT-----
Sus TTGAGCTTTAAGAAGAC---
CCAACAGTCAGGCACTACGAAGGTGAACAATAT-----
Tursiops TCAAGCTTTAAGGAGAC---
CCAACAGTTAGGCACTATGAAAGCGAGCAATAT-----

Allig_mississip
CCATTGCCTGAGGCAGAAGGCAGCCCGGCCGGGCAATATGGAAACCCACAATACCTTCCA
Allig_sinensis
CCATTGCCTGAGGCAGAGGGCAGCCCGGCCGGGCAATATGGAAACCCACAATACCTTCCA
Gharial
CCATTGCCTGAGGCAGAGGGCAGCCCGGCCGGGCAATATGGAAACCCACAATACCTTCCA
Crocodilus_nilo
CCATTGCCTGAGGCAGAGGGCAGTCCAGCTGGGCAATATGGAAACCCACAATACCTTCCA
Crocodilus_poro
CCATTGCCTGAGGCAGAGGGCAGTCCAGCCGGGCAATATGGAAACCCACAATACCTTCCA
Aspidoscelis CAATTACTTGACCTTGAC-----
AGACAGTACAGAAATGATCCATAC-----
Shinisaurus CATTGCTTGATCTTGAC-----
AAACAGTATAGAAATCCTTCATAC-----
Ophisaurus CGTTTCCTTGATCTTGAC-----
AGACATTATAGAAATCCTCCATAT-----
Anolis CACTTGCATGATCCTGAC-----
AACCAGTACAGTAATTCTCCATAC-----
Eublepharis CATTGTCATGACCTGGAT-----
AGAGAGTACAGAAACATTCCTTAT-----
MournGekko CATTGCTTGACCAGGAC-----
AGGGAGTATAGAAACCCTCCCTAC-----
Gekko_japon CATTGCTTGACCAGGAC-----
AGGGAGTATAGAAACCCTCCCTAC-----
Python CATTGGCTGATCTTGAT-----
AGACAATACCAAATCCTCCCTAT-----
Boa_constrictor CATTGGCTGATCTTGAT-----
AGACAATACCAAATCCTCCCTAT-----
Vipera CATTGGCTGATCCTGAT-----
ATACAGTACCAAATCCTCCCTAT-----
Protobothrops CATTGGCTGATCCTGAT-----
ATACAGTACCAAATCCTCCCTAT-----
Crot_horrid CATTGGCTGATCCTGAT-----
ATACGGTACCAAATCCTCCCTAT-----
Crot_mitch CATTGGCTGATCCTGAT-----
ATACGGTACCAAATCCTCCCTAT-----
Thamnophis CATATGACTGATCCTGAT-----
ATACAATACCAAATCCTCCCTAT-----
Cobra CATTGGCTGATCCTGAT-----
ATTCAATACCAAATCACCCTAT-----
Pantherophis CATTGGCTGATCCTGAC-----
ATACAATACCAAATCCTCCCTAT-----
Pogona CATTGCTAGATGTTGAC-----
AGAGAGTATAAAAATCCTCCTTAC-----

Ornithorhynchus
AGCCGGGCAACCGAACCCCAAGATTACCCCCGTATCCCGAAGGT---GGCCTGGAGAAA

Monodelphis
 AGTCATCCATCCAAGCCAAAGGAATACCCCCAACATTCCACAGAT---AATTTAGAAAGA
 Mus_musculus ---
 GCCTCAACCTAGCGAAGGAATACCTTCCTTATTCCTTAAGT---AATCCACCAAAA
 Rattus ---
 ACCTCAACCTGGCGAAGGAATACCTTCCTTATTCCTTAAGT---AATCCACCAAAG
 Cavia ---
 GCCTCAAATCAACCAAAGGAATACCTTCCTTATTCCTTAGAT---AACCCATCTAAG
 Homo ---
 ACCTCAAATCAGCCAAAGGAATATCTTCCTTATTCCTTAGAT---AATCCATCAAAA
 Equus ---
 ACCTCAAATCAACAAAAAGAATATCTTCCTTATTCCTTAGAT---AACCCATCGAAA
 Ursus ---
 ACCTCAAATCAACCAAAGGAATACCTTCCTTATTCCTTAGAT---AATCCATCAAAA
 Bos ---
 ACCTCAAACCAACCAAAGGAATACTCTCCCTTATTCCTTAGAT---AATCTACCAAAA
 Sus ---
 ACCTCAAATCAGCCAAAAGAATACCTTCCTTATTCCTTAGAT---AATCCATCAAAA
 Tursiops ---
 ACCTCAAATCAACCAAAGGAATACCTTCCTTATTCCTTAGATATTAATCCATCAAAA
 Allig_mississip
 AGCAATCCAGCAGAGCAGGAGGTTTATTTCCAGTACTCTAAAGAC-----
 Allig_sinensis
 AGCAATCCAGCAGAGCAGGAGGTTTATTTCCAGTACTCTAAAGAC-----
 Gharial
 AACAAATCCGGCAGAGCAGGAGGTTTATTTCCAGTACTCTAAAGAC-----
 Crocodilus_nilo
 AGCAATCCAGCAGAGCAGGAGGTTTATTTCCAGTACTCTAAAGAC-----
 Crocodilus_poro
 AGCAATCCAGCAGAGCAGGAGGTTTATTTCCAGTACTCTAAAGAC-----
 Aspidoscelis ---
 AGTCCAACACAACACTATATGTATCCCAAATATTCTATAGAA---AATCCATTCAAGT
 Shinisaurus ---
 AATCCAAGTCAGCACCATGCCTATCCAAAATATTCTACAGAG---AATCCATCCAAT
 Ophisaurus ---
 AATCCGAGTCAGCGCCATGCCTACCCAAACTATTCTACAGAG---AATCCAGCCAAT
 Anolis ---
 AATCCAACCTCATCACCAGACATATCAAAAATATACTACAGAA---AATCCACCTAGT
 Eublepharis ---
 AGTCCAACCTCAGCAGCATGCGTATCCTAAGTATTCCTCCGGAA---AATCCATCCGAC
 MournGekko ---
 AATCCAACCTCATCAGCATGCATATCCAAAGTATTCCCCAGAA---AATCCATCCAAC
 Gekko_japon ---
 AATCCAACCTCATCAGCATGCATATCCAAAGTATTCCCCAGAA---AATCCATCCAAC
 Python -----
 AATCCAAAATATTCTACAGAA---CATACAGCCAAT
 Boa_constrictor ---

AATCCAAATGAGCATCATGTAAATCCAAAATATTCTACAGAA---CATCCAACCAAT
Vipera ---
AATCCAAGTGAGCACCATATAAATCCCAAATATTCTATAGAA---CATCCAGCCAAT
Protobothrops ---
AATCCAAGTGAGCACCATATAAATCCCAAATATTCTATAGAA---CATCCAGCCAAT
Crot_horrid ---
AATCCAAGTGAGCACCATATAAATCCCAAATATTCTATAGAA---CATCCAGCCAAT
Crot_mitch ---
AATCCAAGTGAGCACCATATAAATCGCAAATATTCTATAGAA---CATCCAGCCAAT
Thamnophis ---
AATCCAAGTGAGCACCATATAAATCCCAAATATTATACAGAC---CAACCAGCTAAT
Cobra ---
AATCCAAGTGAGCACCATATAAATCCCAAATATTATACAGAA---CAACCAGCCAAT
Pantherophis ---AATCCAAGT-----
ATAAATCCCAAATATTATACAGAA---CAACCAGCCAAT
Pogona ---
AACCACCTCAGTACCCCATGCATCCAAGATTTTCTACAGAA---ACTCCACCCAAT

Ornithorhynchus -----
CACCGAGATTTCCCTACGGTGACTTTTACCCCGGGGCCAGAAAGACAATCTC
Monodelphis CAA---AGA---
AATCCGTCTTATGGTGAATATTATCCCTGG-----CACTTT
Mus_musculus CCC---
AGTGAAGATTTTCCTTACAGTGAATTCTATCCCTGGAACCCACAGGAAACGTTT
Rattus CCC---
AGTGAAGACTTTTCCTTACAGTGAATTCTATCCCTGGAACCCACATGAAACTTTT
Cavia CCC---
AGAGAAGAGTCTCCTTACACTGACTTTTATCCTTGGAGCCTTGATGAGACTTTC
Homo CCA---
AGGGAGGATTTTTATTACAGTGAATTTTACCCATGGAGCCCGGATGAGAATTTT
Equus CCC---
AGGGAGGATTTTCCTTATGGTGAATTTTACCCCTGGAACCCAGATGAGAATTTT
Ursus CCC---
AGGGAAGATTTCCCTTATGGTGAATTTTACCCCTGGAACCCAGATGAAAATTTT
Bos CCC---
AGGGAGTATTTTCCTTACGGTGAATTTTACCCCTGGAGCCCAGATGAGAACTTT
Sus CCC---
AGAGAGGATTTTCTTTATGGTGAATTTTACCCCTGGAACCCAGAGGAGAACTTC
Tursiops CCC---
AGGAAGGATTTCCCTTATGGTGAATTTTACCCCTGGAGCCCAGATGAGAATTTT
Allig_mississip CAG---
GGGAGATATTTCCCTTACAATGAAATCAGCCCCCTGGGCCCCAGAAGATAATTAC
Allig_sinensis CAG---
GGGAGATATTTCCCTTACAATGAAATCAGCCCCCTGGGCCCCAGAAGATAATTAC
Gharial CAG---
GGGAGATATTTCCCTTATGATGAAATCAGCCCCCTGGGCCCCAGAAGATAATTAC
Crocodylus_nilo CAG---

GGGAGATATTTCCCTTACGATGAAATCAGCCCCTGGGCCCCAGAAGATAATTAC
Crocodilus_poro CAG---
GGGAGATATTTCCCTTACGATGAAATCAGCCCCTGGGCCCCAGAAGATAATTAC
Aspidoscelis CAA---
AGAAGTAATTTGCCATATGAGGAAATTGGCACATGGAACGCAGAAGAAAATCCT
Shinisaurus GAC---
AGAGGTAATTTGCCATATAAGGAAATTAACCAATGGACCCCCGAAGAGCGGTCT
Ophisaurus GAC---
AGAGGTAATTTGCCATATGAAGGAATTAATCAGTGGACGCCAGAAGAGCGGCCT
Anolis GAA---
ATAAGTAATTTACCATATCGGAAAATTAACCAGTGGACCCAAGAAGAACATTCT
Eublepharis
CAACAGAGAAGTAACGTGCCGTACAAGGAAATTCACCCGTGGATCCCAGAGGAACATTCT
MournGekko
CAAAGAAGAGGTAATGCCCCATACACGGAAATTAACCCATGGATCCCAGAAGAACATTCT
Gekko_japon
CAAAGAAGAGGTAATGCCCCATACACGGAAATTAACCCATGGATCCCAGAAGAACATTCT
Python GAA---
AGAGGTAATTTGCCATATGAGGAGATTAACAGACGGATCCCA---GAACATTCT
Boa_constrictor GAA---
AGAGATAATTTGCCATATGAGGAAATTAACAGACAGATCCCA---GAACATTCT
Vipera GGA---
AGAGGCAATTTGCCATATGAGGAAATTAACAGACAGATCCCA---GAACATTCT
Protobothrops GGA---
AGAGGCAATTTGCCATATGAGGAAATGAACAGACAGATCCCA---GAACATTCT
Crot_horrid GGA---
AGAGGCAATTTGCCATATGAGGAAATGAACAGACAGATCCCA---GAACATTCT
Crot_mitch GGA---
AGAGGCAATTTGCCATATGAGGAAATGAACAGACAGATCCCA---GAACATTCT
Thamnophis GAA---
AGAGGCAATTTGCCATATGAGGAAATTAACAGACGGATT-----
Cobra GAA---
AGAGGCAATTTGCCATATGAGGAAATTAATAGATGGATTCCA---GAACATTCT
Pantherophis GAC---
AGAGGCAATTTGCCATATGAGGAAATTAACAGACGGATTCCA---GAACATTCT
Pogona GAA---
AGAGACAATTTGCCATATGAGCGAATGAACCAATGGACCCCCGAAAAACATATA

Ornithorhynchus CAACCGTACAATGGGGCCGATCAGCTC-----
CCGGTGGAGGGCAGGGGGTATTATACC
Monodelphis
CCACTTACAATTTTGCTCCTCCTCTAACACCACCAAGAGAAAACAGTGGTTATTATTAT
Mus_musculus
CCAATATATAACCCAGGTCTACTATAGCACCACCCGTGGACCCCAGAAGTTATTATGTT
Rattus
CCAATCTATAACCCAGGACCTACTATAGCACCACCTGTGGACCCCAGAAGTTATTATGTT
Cavia

CCATCCTACAGCCCAGGTCCCACAGTGTCTCCGCCAGGGAAGAACAGAGGTCATCAGGTT
Homo
CCATCATATAATACAGCTTCTACTATGCCACCACCTATAGAGAGCAGGGGCTACTACGTT
Equus
CTATCATATGATACAGCTCCCCTGTATTACCACCTGTGGAGAACAAGGGCTATTATACT
Ursus
CCATCATATAATACAGCTCCCCTGTACCACCACCTGTGGAGAGCAGGGGCTATTATGCT
Bos
CCATCATATAATACTGCTCCCCTATACCCTGTCTGTGGAGAACAAGGGGCTATTATCCT
Sus
CCATCATATAATACAGCTCCCCTGTATCATCACCTGTGGAGAGCAGGGGCTATTATGCC
Tursiops
CCATCATATAATACAGCTCCCCTGAACCGCGGCCAGTGGAGAGCAGGGGCTATTATGCT
Allig_mississip CCTCTTTATAAAGTAGGGCCCCCAAGG-----
CAAACAGAAAACATCCCGTATCATTTA
Allig_sinensis CCTCTTTATAAAGTAGGGCCCCCAAGG-----
CAAACAGAAAACATCCCGTATCATTTA
Gharial CCTCTTTATAAAGTAGAGCCCCCAAGG-----
CAAACAGAAAACATCCCGTATCATTTA
Crocodilus_nilo CCTCTCTATAAAGTAGAGCCCCCAAGG-----
CAAACAGAAAACATCCCGTATCATTTA
Crocodilus_poro CCTCTCTATAAAGTAGAGCCCCCAAGG-----
CAAACAGAAAACATCCCGTATCATTTA
Aspidoscelis CCAGCTTTTAATGCAGAGCACTTAAGG-----
CAAACAGAAGATATCCCATAT-----
Shinisaurus CCAGTTCATGGTGCAGAACAACCTTGAGG-----
CACACAGAAAACATCCCATATCGTATG
Ophisaurus CCAGTTCATAGTATAGAACCCTTGAGG-----
CGCACAGAAAACCTTCCCATATCGTATG
Anolis CCAGTTCACACTGCAGGACACTTGAGG-----
CAAATGGAAAACGTGCCATATCGTACC
Eublepharis CCACCGTATACTGCCGAATATTTGTGG-----
CAAACAGAAGGCATCCCTGACCGTAAG
MournGekko CCACCATATGCTGCAGAGCACTTGAGG-----
CAAACAGAAAATATCCCTTACCGTAGG
Gekko_japon CCACCATATGCTGCAGAGCACTTGAGG-----
CAAACAGAAAATATCCCTTACCGTAGG
Python CCAGTTGGTGGTTCAGAACAT-----
TATGAAAATATTCATATCATATA
Boa_constrictor CCAGTTCGTGGTCCAGAACAT-----
TATGAAAATGTTCCATATCATATA
Vipera CCAGTGCATGGTTCAGAACAT-----
TATGAACATATTCATATCATATA
Protobothrops CCAGTGCATGGTTCAGAACAT-----
TATGAACATATTCATATCATATA
Crot_horrid CCAGTGCATGGTTCAGAACAT-----
TATGAACATATTCATATCATATA

Crot_mitch CCAGTGCGTGGTTCAGAACAT-----
TATGAACATATTCATATCATATA
Thamnophis CCAGTTCACGGTCCAGAACAT-----
TATGAAAATGTTCCATATCATATA
Cobra CCAGTTCATGGTTCAGAACAT-----
TATGAAAATGTTCCATATCATATA
Pantherophis CCAGTTCATGGTTCAGAACAT-----
TATGAAAATGTTCCATATCATATA
Pogona TTTATTCCGGTTACAGAACATTTGAAG-----
CCAGTGGAATATCCCATATCATACA

Ornithorhynchus ---
CATGACGCCGTGGGACAGGGAGGCCCTCTGCAGTTTCTTCCCGGGATTCTGGGGAC
Monodelphis
CCTCCTAACGCCTTGGACAAGAAGAGAGTACACCATCTCCATCTTGGGGGTCATGGGAC
Mus_musculus ---
AATAATGCCATAGGACAAGAAGAAAGCACTCTCTTTCTTCATGGACCTCCTGGGAC
Rattus ---
AACAAATGCAGTAGGACAAGAAGAAAGCACTCTCTTTCTTCATGGACCTCCTGGGAC
Cavia ---
AATAACGCCATGCGACAAGAAGGAAGTGCTCTCTTTCTTCACCAAACCTCCTGGGAT
Homo ---
AATAATGCCGCTGGACCAGAAGAAAGCACTCTATTTCTTCACGGAATTCCTGGGAC
Equus ---
AGTGATGTTATTGGACAAGAAGAAAACACTCCATTTCTTCTTGGAACTCCTGGGAC
Ursus ---
AATAATGCTGTTGGACAAGAAGAAAGCACTCTGTTTCTTCTTGGAACTCCTGGGAC
Bos ---
ACTAATGCTGTTGGACAAGAAGAAAACACTATGTTTCTTCTTGGAAATTCCTGGGAC
Sus ---
AACAAATGCTGTTGGACAAGAAGAAAGCACTATGTTTCTTCTTGGAGCTCCTGGGAT
Tursiops ---
AATAATGCCGTTGGACAAGAAGAAAGCACTATGTTTCTTCTTGGAAATTCCTGGGAC
Allig_mississip ---
AAAAGAGAGTTTGGTCCTAGAGGGAGCATC-----CCATGGGAC
Allig_sinensis ---
AAAAGAGAGTTTGGTCCTAGAGGGAGCATC-----CCATGGGAC
Gharial ---
AAAAGAGAGTCTGGTCCTAGAGGAAGCATC-----CCATGGGAC
Crocodilus_nilo ---
AAAAGAGAGTTTGGTCCTAGAGGGAGCATC-----CCATGGGAC
Crocodilus_poro ---
AAAAGAGAGTTTGGTCCTAGAGGGAGCATC-----CCATGGGAC
Aspidoscelis -----CCAGTGTTTAGAGAAAAGGAGATGAATGCA---
CAGAATCAATGGTTAGATTCT
Shinisaurus ---AACAAATGTGTTGGACACAGAGAGAGGAATTTG---
CAGAACCAAAGGTCAAGCTCT

Ophisaurus ---AGCAATGTGTTTGGACCCCGAGAGAGGAATTTG---
CAGAGCCAAAGGTCAAGCTCT
Anolis ---AACAGTAAATTTGAACAAGGAGAAAGGAAATTC---
CAGAACGTAGGGTCAGGCTCT
Eublepharis ---AGCAATGCATTTGGGCACCCAGAGAGGACTTAC---
CAGAATGAAGGAGCAAACCTCT
MournGekko ---AACAAATGAATTTGGACACCGAGAGAGGAATTTT---
CCAAATGAAGGAGCAAACCTCT
Gekko_japon ---AACAAATGAATTTGGACACCGAGAGAGGAATTTT---
CCAAATGAAGGAGCAAACCTCT
Python ---AGCAATACATTTGGACACACAGAGAGAAATCTG---
CCATACCAAGGGCTATACTCT
Boa_constrictor ---AGCAATACATTTGGACACATAGAGAGAAATCTG---
CCACACCAAGGGCCATACTCT
Vipera ---AGCAATATACATGGACACACAGAGAGGAATCTG---
CCATACCCTGGACCATAACCCT
Protobothrops ---AGCAATACACATGGACACACAGAGAGGAATCTG---
CCATACCCTGGACCATAACCCT
Crot_horrid ---AGCAATACACATGGACACACAGAGAGGAATCTG---
CCATACCCTGGACCATAACCCT
Crot_mitch ---AGCAATACACATGGACACACAGAGAGGAATCTG---
CCATACCCTGGACCATAACCCT
Thamnophis ---AGCAACACACATGGACAGATAGGTAGGAATCCA---
CCATACCCT---CCATATCCT
Cobra ---AGCAATACACATGGTCCCCCAGAGAAGAATCTG---
CCATACCCTGGACCATAACCCT
Pantherophis ---AGCAACACACATGGACACACAGAGAGGAATCCA---
CGATACCCTGGACCATAACCCT
Pogona ---AATGGTATGTTTGGGCAAAAAGATCAGAATATG---
GGAAATCAAGGGTCAAACCTCT

Ornithorhynchus
TGGGGATTACGGTCGGCTGCTCAAGAA-----AGAAGAGCACCA
Monodelphis
CAAAAGAATTATGTCCCAGCAAAAAAG-----GGAAGAATACCA
Mus_musculus
CACAGGAATCAAGCTGAGAGGCAGAAA-----GAGAGTGAGCCA
Rattus
CACAGGAATCAAGCTGAGAGGCAGAAA-----GAAAGTGAGCCG
Cavia
CAGGGGATTCAAGTGCAGGGGCAGCAG-----GAAAGCGAGCCA
Homo
CACAGGATACAAGCCCAAGGGCAGAGA-----GAAAGAAGGCCG
Equus
CACAGGATTCAAGCCCAAGGGCAGAAA-----GAAATAAGGCCA
Ursus
CACAGGATTCAAACCCAAGGGCAGAAA-----GAAAGGCGGCCA

Bos
CACATGGTTCAAGTCCAAGGGCAGAAA-----GAAAGGAGGCCA
Sus
CCCAGGATTCAAGCCCAAGGGCAGAAA-----GAAGGGAGACCA
Tursiops
CACAGAATTCAAGCCCAAGAGCAGAAA-----GAAAGAAAGCCA
Allig_mississip
CAGGAAACAAACCCCTTGCCACAGAACTTCAACCCTCCACCTCATCCAGGCAGATCACAG
Allig_sinensis
CAGGAAACAAACCCCTTGCCACAGAACTTCAACCCTCCACCTCATCCAGGCACATCACAG
Gharial
CAGGAAACAAATCCCTTGCTACAGAACTTCAACCCTCCACCTCAACCAGGCAGATCACAG
Crocodilus_nilo
CAGGAAACAAATCCCTTGCTACAGAACTTCAACCCTCCACCTCACCCAGGCAGATCACAG
Crocodilus_poro
CAGGAAACAAATCCCTTGCTACAGAACTTCAACCCTCCACCTCACCCAGGCAGATCACAG
Aspidoscelis
CCTACTACAAAGAATCACTCAGGTCCCT-----GTCAGAACACAA
Shinisaurus
GCACTACAAAGCACCCTCTCCTCCAA-----GGAGGACCACAA
Ophisaurus
CCTACTACAGAGTGCCACTTTCCACCAA-----GGAGGACCACAA
Anolis
CCACAACAAAGGAACACT---
TTCCAA-----GAAGAAGCACAA
Eublepharis
CCATCCCAAGGCCCCACTCTTGTCCAA-----AGAGTACCACAA
MournGekko
CCACCACAAAGCACCACACTTCTCCAA-----GGAGGATCACGG
Gekko_japon
CCACCACAAAGCACCACACTTCTCCAA-----GGAGGATCACGG
Python
CCACCACAAAGTAGTAATCTTTTCCAA-----GGAAGATCACAT
Boa_constrictor
CCACCACAAAGTAGTAAACTTTTCCAA-----GGAAGATCACAT
Vipera
GCACCAAAAAGTAGTCATCTTTTCCAA-----GGAAGATCACCT
Protobothrops
CCACCACAAAGTAGTAATCTTTTCCAA-----GGAAGATCACCT
Crot_horrid
CCACCACAAAGTAGTAATCTTTTCCAA-----GGAAGATCACCT
Crot_mitch
CCACCACAAAGTAGTAATCTTTTCCAA-----GGAAGATCACCT
Thamnophis
CCACCACAAAGTAGTAATCTTTTCCAA-----GGAAGATCACCT
Cobra
CCACCACAAAGTAGCAATATTTTCCAA-----GGAAGATCACCT
Pantherophis

CCATCACAAACTAGTAATCTTTTCCAA-----GGAAGATCACCT
Pogona
CCACCACAAAGCATCTCTGTCCCAA-----CGGGGGGCACAG

Ornithorhynchus TACGATGAG---
AGAGATTCTTGGGACCACGCGATAAATTCACCCAAATCGACAGCGGGT
Monodelphis TATTATAAT---
AGATATTTCTGGGATCAAGCCACCAATTTACACAAATCTGCAGCAAGT
Mus_musculus TATTTTAAAC---
AGAAATGTCTGGGATCAGTCAATAAATTTACACAAATCTAATATA---
Rattus TATTTCAAC---
AGAAATGTCTGGGATCAGTCAATGAGTTTACACAAATCTAATATACAA
Cavia CAGTTTCAC---
AGAACTACTGGGATCAGGCAACAAATTTACATGAA-----GTCGGT
Homo TATTTTAAAC---
AGAAATATCTGGGATCAGGCAACACATTTACAAAAAGCCCCAGCTAGG
Equus TACTTTAAAC---
ATAAATTTCTGGGATCAGCCAACAAATTTACACAAAGCCCCTGCTAAT
Ursus TATTTTAAAC---
AGAAATTTCTGGGATCAGCCTACAACCTTTACACAAAGCACCCCCTAGT
Bos TATTTTACC---
AGAACTTTCTGGGGTCAGCCAACGAATCTACCCAAAGCCCCTGCTAGT
Sus TATTTTAAAC---
AGAAATTTCTGGGATCAGTCAACAAATTTATACAAGACCCCCTACTAGT
Tursiops TATTTTAAAC---
AGAAATTTCTGGGATCAGCCAACAAATTTACACAAAGCCCCTGCTAGT
Allig_mississip TTTTAAACA---
AGAAGTCCCCGGGATCCAGAA-----ATGGGG
Allig_sinensis TTTTAAACA---
AGAAGTCCCCGGGATCCAGAA-----ATGGGG
Gharial TTTTAAACA---
AGAAGTCCCCGGGATCCAGAA-----ATGGGG
Crocodilus_nilo TTTTAAACA---
AGAAGTCCTCGGGATCCAGAA-----GTGGGG
Crocodilus_poro TTTTAAACA---
AGAAGTCCTCAGGATCCAGAA-----GTGGGG
Aspidoscelis TACACTGAA---
AGAGATACATGGGCTCCCAAAGG-----GTGGGG
Shinisaurus
TATGCTGAAAAAAGAAACACATGGGTCCCCCAAATG-----GGGGGC
Ophisaurus TACATTGAA---
AGGGACACATGGGTCCCCCAAGG-----GTGGCC
Anolis TATGCTGAA---
AGAAACACATGGGTCCCCAAAGA-----GTGGAT
Eublepharis TACTCAGAA---
AGAGATACTTGGGGCCCTGAGAGG-----ATGGGG
MournGekko TACCCAGAA---

AGAGACACTTGGAGCCCTCACAGG-----ATGGGG
Gekko_japon TACCCAGAA---
AGAGACACTTGGAGCCCTCACAGG-----ATGGGG
Python TATGATGAA---
AGAGACACATGGGCCCCCAAAG-----GTTGAC
Boa_constrictor CATGATGAA---
AGAAACACATGGACACCTGAAATT-----GTTGAC
Vipera TATGATGAA---
AGAGATACATGGGGCCCCAAATTG-----GCTGAC
Protobothrops TATGATGAA---
AGAGATACATGGGCCCCAAAGTG-----GCTGAC
Crot_horrid TATGATGAA---
AGAGATACATGGGCCCCAAAGTG-----GCTGAC
Crot_mitch TATGATGAA---
AGAGATACATGGGCCCCAAAGTG-----GCTGAC
Thamnophis TATGATGAA---
AGAGATAGATGGGCCCCAAAGTG-----GCTGAC
Cobra TATGATGAA---
AGAGATACATGGGCCACCAAAGTG-----GCTGAC
Pantherophis TATGATGAA---
AGAGATACATGGGCTCCCAAAGTG-----GCTGAC
Pogona TATGCAGAA---
AGAAGCACATGGGTCCCTCCATA-----CTTGGT

Ornithorhynchus GCC-----
ACGGAAACCTGTCCCCGTCCCACAGCGTTCCCGCCGGCATCCGAGGA
Monodelphis
GCCCTGGAGCAGAGAGAACATCAACCCATTCCAGTAGTTTTCCAGCTGGGCTTAGAGGA
Mus_musculus ---CCA-----
AACCATCCTTATTCCACTACATCCCCTGCTAGATTTCCAAAA
Rattus AACCCA-----
AACCATCCTTATTCCACTACATCCCCTGCTGGATTTCCAAAA
Cavia
CCACCAAACCAGAGAAGGAACTATCCCTATCCCAGTCAGCCCCACGTTGGGCTCCAGAAA
Homo
CCACCAGACCAGAAAGGTAACCAGCCCTATTACAGTAACACCCCAGCTGGGCTTCAGAAA
Equus
CCACCACACCAGAAAGAGAACCAGCCCTATTCCAGTAACTCCCCGGCTGGGCTTCAGAAA
Ursus
CCACCACACCAGAAAGAGAACCAGCCCTATCCTAGCAATTCCCCAGCTGGACTTCAGAAA
Bos
CCACCATAACCACAAGGAGAATCAGCCTTATTTTCAGTAACTCCCCAACTGGGCTTCAGAAA
Sus
TCACCACACCAGAAAGAGAACCAGCCTTATTTCCAATAACTCCCCAGCTGGTCTTCAGAAA
Tursiops
TCACCATAACCAGAAGGAGAACAAGCCTTATTCCAGTGACTCCCCAGCTGGGCTTCAGAAA
Allig_mississip

TCACCAGTACAGACAGAACGTACCCCGCAC-----
 Allig_sinensis
 TCACCAGCACAGACAGAACGTAACCCCCAC-----
 Gharial
 TCACCAGCACAGACAGAACGCACCCCTAC-----
 Crocodilus_nilo
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 Crocodilus_poro
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 Aspidoscelis
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 Shinisaurus
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 Ophisaurus
 TCATCTACTCAGAAAGACACTCCACCTACTATAATGGCTACTCCACAGACTTCAGAAGA
 Anolis
 CCATCTGCTCAGAAAGAACTGCACCTACTATAATATCTATTCCACAGACTTCAGAGGA
 Eublepharis
 CCTTCGGTACAGAAAGAGGCTTCACCTATTTTAATAGCTATCCCCCTGACTTCAGAAGA
 MournGekko
 CCTTCATTTCAGAAAGAAGCTTCACCTATTTTAATAGCTATTCCCCGGATTCCAGAAGA
 Gekko_japon
 CCTTCATTTCAGAAAGAAGCTTCACCTATTTTAATAGCTATTCCCCGGATTCCAGAAGA
 Python
 CAAGTGGCTCCCAAAGAACTTCACCTACTTTAATACTTACTCCACAAACTTCAGAAGA
 Boa_constrictor
 CCAGCTGCTCTGAAAGAACTTCATCCTACTTTAATACTTACTCCACAAACTTCAGAAGA
 Vipera
 CCATCTGCTCCCAAAGAACTTCATCCTACTTTAATCCTTACTCCACAAACATCAGAAGA
 Protobothrops
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 Croc_horrid
 CCATCTGCTCCCAAAGAACTTCATCCTACTTTAATCCTTACTCCACAAACATCAGAAGA
 Croc_mitch
 CCATCTGCTCCCAAAGAACTTCATCCTACTTTAATCCTTACTCCACAAACATCAGAAGA
 Thamnophis
 ACATCTGCTCCCAAAGAACTTCATCTTACTTTAATACGTACTCCTCAAATATCAGAAGA
 Cobra
 CCATCTACTCTCAAAGAAACATCATCCTACTTTAATACGTATTCTTCAAACATCAGAAGA
 Pantherophis
 TCATCTGCTCCCAAAGAACTTCATCCTATTTTAATACGCACTCCTCAAACATCAGAAGA
 Pogona
 CCATCTCCTCAGAAAGAACTTCACCTACTTTAATGCCTACTCTACAGACCTCAGAAGA

 Ornithorhynchus AAGCCA-----CATGAAGAATCCGTGGAT-----
 TGGAGCTACAGAGGAGGGCAGGTC
 Monodelphis AGCCTA---ACATACCAAGAAACAGAGAAT-----

CTGAACTATGACAGTGACACAAT
 Mus_musculus GATCCA---ACATGGTTTGAAGGTGAGAAT-----
 TTGAACTAT---GATTTGCAAATT
 Rattus GATCCA---ACGTGGCTTGAAGGTGAGAAT-----
 TTGAACTAT---GATTTACAAATT
 Cavia ACCCCA---ACCTGGCAGGAAGGCAAGAAT-----
 CTGAATTAT---GATATGCAAATG
 Homo AATCCA---ATATGGCATGAAGGTGAGAAT-----
 TTGAACTAT---GGCATGCAAATA
 Equus AATCCA---ACATGGCCTGAAGGTGAGAAT-----
 TTGAATTAT---GGCATGCAAATT
 Ursus ATTCCA---ACATGGCGTGAAGGTGAGAAT-----
 TTGAATTAT---GGCATGCAAATT
 Bos GATCCA---ACATGGCATGAAGGTGAGAAT-----
 TTGAATTAT---GGCATGCAAATC
 Sus AATCCA---ACATGGCATGAAGGTGAGAAT-----
 TTGAATTAT---GGTATGCAAATC
 Tursiops AATCCA---ATATGGCATGAAGGTGAGAAT-----
 TTGAATTAT---GGCATGCAGACC
 Allig_mississip

 Allig_sinensis

 Gharial

 Crocodilus_nilo

 Crocodilus_poro

 Aspidoscelis AACCCA---
 ACTGTTAGTGAAGGCAGAAAGGAAGTAATACCTGGA---AGTGTCCCCTTT
 Shinisaurus AACCCA---
 ACATATACAGAAGACACAGGGGGAGCCATACATGTG---AGCGCACCAATT
 Ophisaurus AACCCA---
 ACATATTCTGAAGACACAGGGGATGCTATACATGCA---CGTGCACCAATT
 Anolis AATCCA---
 ACACATGTTGAAGACAGAGAGAGAATCATAATATG---AATGCACCCATT
 Eublepharis AACCCA---
 ACACATATGGAAGACACAAGG-----AGTGCTCCGATG
 MournGekko AACCCA---
 ACACATATGGAAGACGCAGGG-----GGTGCTCACATT
 Gekko_japon AACCCA---
 ACACATATGGAAGACGCAGGG-----GGTGCTCACATT
 Python AACCCA---
 ACACGTACTGAAGATGCATGGAGAGCCATACATATG---AGGGCACCCATT
 Boa_constrictor AACCT---ACACAAATAGAAGATACATGGAAG---
 ATACATATG---AGTGCACCCATT

Vipera ATCCCA---
ACACATACTGAAGATACATGGAGAACCATAACATATC---AATCCACCCATT
Protobothrops AACCCA---
ACACATACTGAAGATACATGGAGAACCATAACATATC---AGTGCACCCATT
Crot_horrid AACCCA---
ACACATACTGAAGATACATGGAGAACCATAACATATC---AGTGCACCCATT
Crot_mitch AACCCA---
ACACATACTGAAGATACGTGGAGAACCATAACATATC---AGTGCACCCATT
Thamnophis AACCCA---
ACATATACTGAAGATACATGGAGAGCCATAACATATC---AGTGCACCCTTT
Cobra AACCCA---
ACATATACTGAAGATACATGGAGAGCCGTACATATT---AGTGCACCCATT
Pantherophis AACCCA---
ACATATACTGAAGATACATGGAAGGCCATAACATATC---AGTGCACCCTTT
Pogona
AAGTCTGATGATGATATTGATGATACTGGCAAATCACACATGGG--AGTGCACCCTTT

Ornithorhynchus
TCCGACTTGGGTGTCCCAGAGGGCGAGGGGCCGGCTCTAATGGAGCCAGTGGCCCGGAGC
Monodelphis
AACAGGATAAATACTCCTGAAAAAGGACAGTTTCTGTCACTGACTCTGTGATTCAAAC
Mus_musculus
ACTAGTTTAAAGTCCACCAGAAAGAGAACAGTTGGCTTTCCCAGACTTCTGCCTCAAAGT
Rattus
ACTAGTTTAAAGTCAACCAGAGAGAGAACAGTTGGCTTTCCCAGACTTGAGGCCTCAAAGT
Cavia
ACCAGGTTGTATTCACCAGAGAGATCGCATTTGGCTTTCCCTGATGTAATGCCTCAGAGC
Homo
ACTAGGATGAATTCTCCAGAGAGAGAACATTCATCTTTCCCTAACTTCATCCCACCAAGT
Equus
ACTAGGTTAAATTCACCAGAGGGAGAACATGTGGCTTTCCCAGACTCAATTCCTCTGAGT
Ursus
ACCAGATTAAATTCACCAGACGGAGAACATTTGGCTTTCCCGGACTTAATTCCTCCAAGT
Bos
ACTAGGTTAAATTCACCAGAGGGAGGACATTTGGCTTTTCCAGACTTAATTCCTCCACAT
Sus
ACTAGGTTAAATTCACCAGAGAGAGATCATTTGGCTTTCCCAGATTTAATTCCTCCAGAT
Tursiops
ACTAGGTTAAATTCACCAGAAAGAGAACACTTGGTTTTCCCAGACTTAATTCCTCCAAGT
Allig_mississip
-----TCCAAGGGA
Allig_sinensis
-----TCCAAGGGA
Gharial
-----TCCAAGGGA
Crocodylus_nilo
-----TCCAAGGGA

Crocodylus_poro
-----TCCAAGGGA

Aspidoscelis -----
AATGATGCTGAAGGAAGAAGTTATGTGAACCCATTGGGATATCCAGATGAC

Shinisaurus
TCCAATGTTAATGTTGCCGGAAGAAGACGTTATCCTGACACACTGGGATATCCAGATGAC

Ophisaurus
TCCAGTGTTAACATTGTTGGAAGAAGACGTTATCCTGACACAGTGGACTATCCAGATGAC

Anolis
TCCACTGAGAATGCTCCTAGAAAGAAGGCATTATCTGGACAGAATGGGATATTCAGATGAC

Eublepharis
TCCAATGCGAACGTTGCAGAAAGAAGCAATTACCGTGACACACTGGGATATCCAGACAAC

MournGekko
TCCAGTGTTAACACTGCAGAAAGAAGAAATTATCCCGACAGACTGGGATACCCAGATGAC

Gekko_japon
TCCAGTGTTAACACTGCAGAAAGAAGAAATTATCCCGACAGACTGGGATACCCAGATGAC

Python
TCAAGTAATAATGCTCCTGTAAGGAGAAATTATCCTAATACAGGAGGATATCCAGATGAT

Boa_constrictor
TCAAGTGATAATGCTCCTGGAAGGAGAAATTATCCTAACACAGGAGGATATCCAGATGAT

Vipera
TCAAGTAATAATTCTCCTGGAAGGAGAAATTATCCTAATACAGGGGGA-----

Protothrops
TCAAGTAATAATGCTCCTGGAAGGAGAAATTATCCTAATACGGGAGGA-----

Crot_horrid
TCAAGCAATAATGCTCCTGGAAGGAGAAATTATCCTAATACAGGAGGA-----

Crot_mitch
TCAAGCAATAATGCTCCTGGAAGGAGAAATTATCCTAATACGGGAGGA-----

Thamnophis
TCAAGTAATAATGTTCTCCTGGAAGGAGAAATTATCCTAATACAGGGGTA-----

Cobra
TCAAGTAATAATGGTCCTGGCAGGAGAAATTATCCTAATACAGGTGTA-----

Pantherophis
TCAAGTAATAATGCTCCTGAAAGGAGAAATTATCCTAATACAGGGGTA-----

Pogona
TCCAGTGTC AATGTTGCAGGGGAAAGACATTATCCAGACACAAGAAGATATTCAGAAGAC

Ornithorhynchus
GATCCGGCCGACCCCAGAGAAGCCTCGTCCTACCCCGTGGCCGTCGCCAGAAGTTCCTGC

Monodelphis
AACCTGATATATCAAGGCGAAGTATATTCATATTTCCCAGCCAGCCAAAGAAGTCCCTGC

Mus_musculus TACCCAACAGGTCAAATGAAGCACACTTATTTTAC---
CAAAGTCAAAGAGGGTCTTGC

Rattus TACCCAACAGGCCAAAATGAAGACCATTTATTTTAC---
CAAAGTCAGAGAGGGTCTTGC

Cavia TATCCCTTAGGTCAAACAGAATCACATTTATTTTAC---
CCAAACCAAGCAGCTCCTGC

Homo TACCCATCAGGTCAAAAAGAAGCACATTTATTTTCAC---
CTAAGCCAGAGAGGCTCTTGC
Equus TACCCAGCAGGTCAAAAAGAAGCACATTTATTTTCAC---
CTAAGCCAGAGAAGCCCTTGC
Ursus TACCCAGCAGGTCAAAAAGAAGCACATGTATTTTCAC---
CTTAGCCAGAGAGGCCCTTGC
Bos TACCCAGGAAGTCAAAAAGAAACACGTCTATTTTCAC---
CTAAGTCAGCGAGGCCCTTGC
Sus TACCCAGGAGGTCAAAAAGAATCACATGTCTTTTCAC---
CTAAGCCAGAGGGGCCCTTGC
Tursiops TACCCAGCAGTTCAAAAAGGAGCACATTTATTTTCAC---
CTAAGCCAGAGAGGCCCTTGC
Allig_mississip TACCCACCAAACCTTTAGAGGGATTACAGCATTCCT-----
TCCTCCAGCCGCTTGTGC
Allig_sinensis TACCCACCAAACCTTTAGAGGGATTACAGCATTCCT-----
TCCTCCAGCCACTTGTGC
Gharial TACCCACCAAACCTTTAGAGGGATTACAGCATTCCT-----
TCCTCCAGCCGCTTGTGC
Crocodilus_nilo TACCCACCAAACCTTTAGAGGGATTACAGCATTCCT-----
TCCTCCAGCCGCTTGTGC
Crocodilus_poro TACCCACCAAACCTTTAGAGGGATTACAGCATTCCT-----
TCCTCCAGCCGCTTGTGC
Aspidoscelis TATCCACCAGAACATAGAATTATGACATCACAATCT-----
ACTAATACCCGTTTGTGC
Shinisaurus TACCCAAGAGAACACAGAACAATCATCTCACACCCT-----
ACTGCAAACCATTTGTGC
Ophisaurus TATCCAAGAGAACACAGAACAATCATCTCACCCCCT-----
TCTGAAAACCATTTGTGC
Anolis TACCCAAAAGAACGCAGAATGATAACTTCACAATCG-----
ACAGCAAACCAGTTGTGC
Eublepharis TACCCAAGAGAGCCCAGAACAATCGCCTCATAACCA-----
ACGGCCGACCATTTGTGC
MournGekko TACCCAAGAGAGCAGAGAACAATCACCTCATAACCA-----
ACTGCCAACCGTTTATGC
Gekko_japon TACCCAAGAGAGCAGAGAACAATCACCTCATAACCA-----
ACTGCCAACCGTTTATGC
Python TTCCCACGAGAACATGAAACCATCACCTCCCAACCT-----
ACTGTCAACTATTTTTTGC
Boa_constrictor TACCCAAGAGAACATGAAACCATCACCTCCCAACCT-----
ACTGTCAACTATTTTCAC
Vipera TATCCAAGAGAACATGAAACCATCACCTCCCAACCC-----
ACTATCAACTATTTTTTGC
Protobothrops TATCCAAGAGAACATGAAACCATTACCTCCCAACCT-----
ACTATCAACTATTTTTTGC
Crot_horrid TATCCAAGAGAACATGAAACCATCACCTCCCAACCT-----
ACTATCAACTATTTTTTGC
Crot_mitch TATCCAAGAGAACATGAAACAATCACCTCCCAACCT-----

ACTATCAACTATTTTTGC
Thamnophis TATCCAAGAGAACATGAAATCATCACCTCCCAACCT-----
ACTATCAACTATTTTTGC
Cobra TATCCAAGAGAACATGAAACCATCACCTCTCAACCT-----
ACTATCAATTATTTTTGC
Pantherophis TATCCAAGAGAACATGAAGCCATCACCTCCCAACCT-----
ATTATCAACTATTTTTGC
Pogona TATCGGGGAGAGTATAGAACAATCACCACACATTCT-----
ACAGCAGATCATTTGTGC

Ornithorhynchus
TGTGCCGGTGGCTCCCCAGGCCCCAGGGACGTCCCCTGGCCCCGCCGGACTATCCTCCA
Monodelphis
TGTGCTGGTGAATCCCCAGGGCCCAGAGAAAGCCCTCTCATTTCCCTCGATTAC-----
Mus_musculus
TGTATTGGTGGCTCCACAGGACATAAAGACAATGTGCTGGCTCTACAAGACTAC-----
Rattus
TGCATTGGTGGCTCCACAGGACATAAAGAAAATGTGCTGGCTTTACACGACTAC-----
Cavia
TGTGTTGGGGTGCTGCAGGGCCCCATAAGAATCCCTTGGCCCTGCAAGACTAC-----
Homo
TGTGCTGGTAGCTCCACAGGGCCCAAGGACAATCCACTAGCTCTACAAGACTAC-----
Equus
TGTGTCGGTGGCTCCATAGGGCCCGAGGACAATCCACTTGCTCTACAAGACTAC-----
Ursus
TGTGCTGGTGGCTCCACAGGACACAAGGACAATGCACTTGCTCTCCAGGACTAT-----
Bos
TGTGCTGGTGGCTCCATAGGGCCCAAGGACAATCCACTTGCTCTACAAGACTAC-----
Sus
TGTGCTGGTGGCTCCATGTGGCCCAAGAACAATCCACTTGCTCTACAAGACTAT-----
Tursiops
TGTGCTGGTGGCTCCACAGGGCCCAAGGACAATCCACTTGCTCTACAAGACTAC-----
Allig_mississip
TGTGCTGGGAATTCTCCAGTGCCAAAGGAAGACCCCTTGGCATCACTGGATTAC-----
Allig_sinensis
TGTGCTGGGAATTCTCCAGTGCCAAAGGAAGACCCCTTGGCATCACTGGATTAC-----
Gharial
TGTGCTGGGAATTCTCCAGTGCCAAAGGAAGACCCCTTGGCATCACTGGATTAC-----
Crocodilus_nilo
TGTGCTGGGAGTTCTCCAGCGCCAAAGGAAGACCCCTTGGCATCACTGGATTAC-----
Crocodilus_poro
TGTGCTGGGAGTTCTCCAGCGCCAAAGGAAGACCCCTTGGCATCACTGGATTAC-----
Aspidoscelis
TGCTCAGGCAATTCCCCGGGGCCAAGAGAAAATATATTGGCACCATTAAGAAGT-----
Shinisaurus
TGTGCAGGTGACTCCCCAGTGCCAAAGAGAAAACATACTGGCACCCTGAGAAGTGCT---
Ophisaurus

TGTGCAGGTGACTCCCCAGGGCCAAGAGAAAACATGCCAGCACCCTGAGAAGTGCT---

Anolis

TGTGCAGATGACTCTCCAATGCCAAGGGAAAACAGACTGGCACCCTAAGAAGT-----

Eublepharis

TGTGAAGGCAATGCCCCAGTGCCGCAAGAAAACGTATTGGCTCCACTGAGAAGT-----

MournGekko

TGTGCAGGCGATTCTTCGGTGCCAAGAGGAAAACACTGGCTCCACTAAGAAGT-----

Gekko_japon

TGTGCAGGCGATTCTTCGGTGCCAAGAGGAAAACACTGGCTCCACTAAGAAGT-----

Python

TGTGCAGATGAGTCCCGAGGGGCAAATGAAAATATACAGGCACCCCTGAAAATT-----

Boa_constrictor

TGTACAGGTGAGACCCCAGGGGCAAATGAAAATATACTGGCACCTCTGAGAACT-----

Vipera

TGTGCAGGTGAGTCCCTAGGGGCAAATGAAAATATACTGGCACCTTTGAGAATT-----

Protobothrops

TGTGCAGGTGAGTCCCTAGGGGCAAATGAAAATATACTGGCACCTTTGAGAATT-----

Crot_horrid

TGTGCAGGTGAGTCCCTAGGGGTAAATGAAAATATACTGGCACCTTTGAGAATT-----

Crot_mitch

TGTGCAGGTGAGTCCCTAGGGGTAAATGAAAATATACTGGCACATTTGAGAATT-----

Thamnophis

TGTACAGGTGAGTCCCCAGGGGCAAATGAAAATATTCTGGCACCTTTGAGAATT-----

Cobra

TGTGCAGGTGAGTCCCCAGGGGGAAATCAAAAATATACTGGCACCTTTGAGAACT-----

Pantherophis

TGTGCAGGTGAGTCCCCAGGGGCAAAGGAAAATATTCTGGCACCTTTGAGAATT-----

Pogona

TGTGCAGAGGACTCTCCGGTGACAAAGGAAGGCCTACCAGCACCCTAAGAAGT-----

Ornithorhynchus

CTGGCCCTCCAGGCTACCTTCCACTAGACCCCCTGGATTACCCTCCGCTAGACAGACCA

Monodelphis

Mus_musculus

Rattus

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Allig_mississip

Allig_sinensis

Gharial

Crocodylus_nilo

Crocodylus_poro

Aspidoscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MournGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

GACTACCTTCCACCGGCCCCACGGGACTACCTCCACCGGACACACCGAACTATTCTCCA

Monodelphis

Mus_musculus

Rattus

Cavia

Homo

Equus

Ursus

Bos

Sus

Tursiops

Allig_mississip

Allig_sinensis

Gharial

Crocodilus_nilo

Crocodilus_poro

Aspidoscelis

Shinisaurus

Ophisaurus

Anolis

Eublepharis

MournGekko

Gekko_japon

Python

Boa_constrictor

Vipera

Protobothrops

Crot_horrid

Crot_mitch

Thamnophis

Cobra

Pantherophis

Pogona

Ornithorhynchus

CTGGACACACCGGACTACCCTCCACACTACCCTCCGCTGGCCCCCAAGACTACTCCTCG

Monodelphis

-----TCTCCA

Mus_musculus

-----ACTTCA

Rattus

-----ACTTCA

Cavia

-----ACCCCA

Homo

-----ACTCCA

Equus

-----ACTCCA

Ursus

-----ACTCCA

Bos

-----ACTCTT

Sus

-----ACTCAA

Tursiops

-----ACTCCA

Allig_mississip

-----TCTTTG

Allig_sinensis-----TCTTTG
 Gharial-----TCTTTG
 Crocodilus_nilo-----TCTTTG
 Crocodilus_poro-----TCTTTG
 Aspidoscelis-----GCTCCT
 Shinisaurus-----GCTCCT
 Ophisaurus-----GCTCCC
 Anolis-----GCTCCT
 Eublepharis-----GTTCCG
 MournGekko-----GCTTCT
 Gekko_japon-----GCTTCT
 Python-----GCACCT
 Boa_constrictor-----GCACCT
 Vipera-----GCACCT
 Protobothrops-----GCACCT
 Croc_horrid-----GCACCT
 Croc_mitch-----GCACCT
 Thamnophis-----GCACCT
 Cobra-----GCACCT
 Pantherophis-----GCACCT
 Pogona-----GCTCCT

 Ornithorhynchus
 CCATTAGGTCTCTCCCTGTGGGAGCTTCAAGTCGGAGGCCCCGGAGCCCCGGA-----
 Monodelphis
 CCCTTTGGTCTTGTTCAGGAGATGATGGAGAAAGAAATCCCCCAACTACGGAG-----

Mus_musculus
 TCCTATGGTCTTCCACCAAGGAAGAACCAAGAAACCAGTCCAGTGCATACAGAA-----
 Rattus
 TCCTATGGCCTTCCACCAAGAAAGACCCAAGAAATCAGTCCTGTGCATACAGAA-----
 Cavia
 TCCTATGGCCTGGCGCCAGGAGAGAATCACAAACCAATCCCACCTACACAGAA-----
 Homo
 TCCTATGGTCTTGCACCTGGGGAGAACCAAGACACCAGTCCTCTGTATACAGAC-----
 Equus
 TCCTTTGGTCTCTTACCAGGGGAGAACCAAGACACCAGCCTTCTGTATATGGAA-----
 Ursus
 TCCTTTGGTCTGTACCAGGAGAGACTCAAGACACCAGCCCTCTGTACACAGAA-----
 Bos
 TTTTTTGGTCTTGCACCAGGGGAAAACCAAGACACCAGCCCTCTCTATACAGAA-----
 Sus
 TCCTTTGGTCTTGCACCAGGGGAGAACCCAGACACCAGCATTGGGTATGCAGAA-----
 Tursiops
 TCTTTTGGTCTTGCACCTAGGGGAGAACCAAGACACCAGCCCTGTGTATATAGAA-----
 Allig_mississip CAGTTGAGACCTTCCACATGGGAA---
 CACAAGCCT-----CCTGAA-----
 Allig_sinensis CAGTTGAGACCTTCCACATGGGAA---
 CACAAGCCT-----CCTGAA-----
 Gharial CAGTTGAGACCTTCCACATGGGAA---
 CACAAGCCT-----CCTGAA-----
 Crocodilus_nilo CAGTTGAGACCTTCCACATGGGAA---
 CACAAGCCT-----CCTGAA-----
 Crocodilus_poro CAGTTGAGACCTTCCACATGGGAA---
 CACAAGCCT-----CCTGAA-----
 Aspidoscelis CATTTCAGCTTGCTTTGTGGGAA---
 CAGAAAGGAAGCTCAACATATCCAGAG-----
 Shinisaurus CAGTTCAGGCTTGCTTCGTGGGAA---
 CACAAAGGAAGCTCAACCTATCCAGAG-----
 Ophisaurus CACTTCAGGCTTGCTTCATGGGAA---
 CACAAAGGAAGCTCAACCTATCCAGAG-----
 Anolis CAATTCAGGCATGCTCTATGGGCA---
 GCAAAAGAAAGCTCAACCTATCCAGAT-----
 Eublepharis CAGTTCAGACAGGCACTGTGGCCG---
 CAAAGAGGAAGTTCACCGTATCCAGAAGCTGAT
 MournGekko CAGTTCAGACTTGCATCGTGGGAA---
 CAAAGAGGAAGTTCACTATATCCAGAGGCCAAA
 Gekko_japon CAGTTCAGACTTGCATCGTGGGAA---
 CAAAGAGGAAGTTCACTATATCCAGAGGCCAAA
 Python CAATTCAGGCTGGCTTCATGGCAA---
 CAAAAACGAAGTCCAACCTATCCAGAA-----
 Boa_constrictor CGATTCAGGCTGGCTTCATGGGAA---
 CAAAAAGGAAGTCCAACCTATCCAGAA-----
 Vipera CAATTCAGGGCGGTTCATGGGAA---

CAAAAAAGTAGTCCAACCTTATCCTGAA-----
Protobothrops CAATTCAGGGCGGTTTCATGGGAA---
CAAAAAAGTAGTCCAACGTATCCTGAA-----
Crot_horrid CAGTTCAGGGCGGTTTCATGGGAA---
CAAAAAAGTAGTCCAACCTTATCCTGAA-----
Crot_mitch CAGTTCAGGGCGGTTTCATGGGAA---
CAAAAAAGTAGTCCAACGTATCCTGAA-----
Thamnophis CAATTCAAGCTAGTTTCATGGGGA---
CAAAAAAATAGCCCAACTTATCCAGAA-----
Cobra CAATTCAAGCTGGTTTCATGGGAA---
CAAAAAAGTAGTCCAACCTTATCCAGAA-----
Pantherophis CAATTCAAGCTGGTTTCATGGGAA---
CAAAAAAATAGTCCAATTTATCCAGAA-----
Pogona CAGTTCAGGCTTGCTCCATGGGAA---
GAGAAGATCAGCGCTGGCTATTCAGAG-----

Ornithorhynchus
GGTAGCCGCTCCAGGCACGTGCAGCAGGCGGCCTCCCCGGTGGGCTACCCGGCCATCCGG
Monodelphis
GGCATCCACATGAAGCATGCGAGGCACATCATCTACTCCACAGACATCCAACCCAACCAA
Mus_musculus
AGCAGTTATATCAAGTATGCAAGACCTAACGTTTCCCCAGCAAGCATCCTACCTAGTCAA
Rattus
AGCAGTTATACCAAATATGCAAAACCTAATGTTTCCCCAGCAAGCATCCTACCTAATCAA
Cavia
AGTAGTCACACCACGCACACACGACCGAATGTTTCCCCAACCAGCATCCTGCCTGGCCAG
Homo
GGTAGTCATACCAAGCAGACAAGAGATATCATCTCCCCAACAAGCATCCTACCAGGCCAA
Equus
GATAGTCACACTAACCATGCAAGAGATACCATCTCCCCAACAATCATCCCACCTGTGCGAA
Ursus
GATAGTCATACTAAACATGCAAGACATACCATCTCTCTACAAGCAACCTGCCTGACCAA
Bos
GACAGTCATACTAAGCATGAAAGATATACTATTTCCCCAACAAGCATCCTACCTGGCCAA
Sus
GATAGTCATATTAAGTATGCGAGACAGACTGTCTCCCCGACAAGCATTGTACCTGGCCAA
Tursiops
GACAGTCAAACCTACGCATGTAAGACATACTATCTCCCCGACAAGCATCCTAGCTGGCCAA
Allig_mississip
GGCAGTCACTCAAAGCATGCTAGGCATGTTGCATACCCAGCTGCTATTCAGTCTGGTCAA
Allig_sinensis
GGCAGTCACTCAAAGCATGCTAGGCATGTTGCATACCCAGCTGCTATTCAGTCTGGTCAA
Gharial
GGCAGTCACTCAAAGCATGCTAGGCACGTTACATACCCAGTTGCTATTCATTCTGGTCAA
Crocodilus_nilo
GGCAGTCACTCAAAGCATGCCAGGCATGTTACATACCCAGCTGCTATTCAGTCTGGTCAA
Crocodilus_poro

GGCAGTCACTCAAAGCATGCCAGGCATGTTACATACCCAGCTGCTATTTCAGTCTGGTCAA
Aspidoscelis
GTCAGCCATGCAAAGTATGCCAGACATGCTCCACATCCAGCTGGTCTCCAGACTAGTAAC
Shinisaurus
GGCAGCCATGCAAAGCATGCCAGGCATGCTCCCTACCTACCTAGCATCCCAACTAATCAT
Ophisaurus
GGCAGCCACGCAAAGCATGCCAGGCACGCCCCCTACCCAGCTGGCAATCAAGCTAATCAT
Anolis
GGCAGCCATGCAAACCTATGTGCGACATGCCCATTCCCCAGCTGGTATTCAAGCTAATAAT
Eublepharis
GGCAGCCACCCTAAGCAAGCTGGCCACACGCTGTACCCATCTGGTATGCAGTCT-----
MournGekko
GGTGACCATATTAAGCAAGCTAGCCACATATTGTACCCGTCCGGTATGCAATCT-----
Gekko_japon
GGTGACCATATTAAGCAAGCTAGCCACATATTGTACCCGTCCGGTATGCAATCT-----
Python
GGCAGCCATGCCTCATAACGCCAGACATCCCCCATAACCTAGCTGGCATTTCAGTCTAATCAT
Boa_constrictor
GGCAGCCATACCTTGTATGCCAGACATCCCCCATAACCTAGCTGGCGTGTTCATAATCAT
Vipera
GGCAGCCATGCCTTGTATGCCAGGCGTCCTGCATACCTAGCTGGCATTTCAGTCTAATCTT
Protobothrops
GGCAGCCATGCCTTGTATGCCAGGCGTCCTGCATACCTAGCTGGCATTTCAGTCTAATATT
Crot_horrid
GGCAGCCATGCTTTATATGCCAGGCATCCTGCATACCTAGCTGGCATTTCAGTCTAATCTT
Crot_mitch
GGCAGCCATGCTTTATATGCCAGGCGTCCTGCATACCTAGCTGGCATTTCAGTCTAATCTT
Thamnophis
GGCAGCCATGCCTTGTATGCCAGGCGACCTGCATACCTAGCTGGCATCCAGTCTAACCAT
Cobra
GGTAGTCATGCCTTGTATGCCAGACATCCTGCATACCTAGCTGGTATCCAGTCTAATCAT
Pantherophis
GGCAGCCATGCCTTGCATGCCAGGCGTCCTGCATACCTAGCTGGCATCCAGTCTAATCAT
Pogona
GGCAGCCACGGAAAGCATGCCCGGCATGCCCTTCTCCAGCGGGTATTCAATCTAATTAT

Ornithorhynchus AGAAACGGCACGGAAGAAGCA-----
CCCCCACGCGGGAGGAGCCGGCTCCT
Monodelphis AGAAATAGTTCAGAGAAAAAT-----
CTATCTGAGAAAGGAGCAAATCCAGACCCT
Mus_musculus AGAAATATCTCAGAGAACAAA-----
CTAACTGCAGAAAGCCCAAACCCAAGTCCA
Rattus AGAAATATCTCAGAGAACAAA-----
CTGACTGCAGAAAGCCCAAACCCAAGTCCA
Cavia AGGAATAGCTCAGAGAAGAAA-----
CTTCTGGGGAAAGCACAAAGCCAAGCACT
Homo AGAAACAGCTCAGAGAAGAGG-----

GAAAGCCAAAAC-----CCT
 Equus GGAAACAGCTCAGAGAAAAGA-----
 CTGCCTGGAGAAAGTCAAACCCAAGTCCT
 Ursus AGAAACAGCTCAGAGAAAAGA-----
 CTGCCTGGGGAAAGTCAAACCCAAGTCCT
 Bos AGAAACAGCTCAGAAAAAAGA-----
 CTTCTGGAGAAAGTCAAACCCAAGTCCT
 Sus AGAAACAGCTCAGAAAAAATA-----
 CTGCCTGGAGAAAGTCAAACCCAAGTCCT
 Tursiops AGAAACAGCTCAGAGAAAAGA-----
 CTGCCTGGAGAAAGTCAAACCCAAGTCCT
 Allig_mississip AAAAAGCTTCACTGCGGCTT-----
 GAGAAAAGCCCAGGAGAAAATGCAGAAAAC
 Allig_sinensis AAAAAGCTTCACTGCGGCTT-----
 GAGAAAAGCCCAGGAGAAAATGCAGAAAAC
 Gharial AAAAAGCTTCACTGCGACTT-----
 GAGAAAAGCCCAGAAGAAAATGCAGAAAAC
 Crocodilus_nilo AAAAAGCTTCACTGCGGCTT-----
 GAGAAAAGCCCAGAAGAAAATGCAGAAAAC
 Crocodilus_poro AAAAAGCTTCACTGCGGCTT-----
 GAGAAAAGCCCAGAAGAAAATGCAGAAAAC
 Aspidoscelis
 AGAGATAATTTTCTGAGAACAGGAGAAAAAATGGCAATCAGGGAGAAAAGATAGACACC
 Shinisaurus -----
 TCTCTGAAGACTGGAAAAATGCTACCTAATCAAAGAGAACATCTGGGTGCA
 Ophisaurus -----
 TCTCTAAAGACTGGGAAAATGCAACCTAATCAAAGAGAGCCTCTCAGTGCA
 Anolis -----CCTCTGAAGAATGGGGG-----
 AGAGAACAAGAAGAACTGGGTGCA
 Eublepharis -----
 TCACTGAAGACTGAGAAAAGCACGCCCAAACAAAGAGAAGACTTGGGTGTG
 MournGekko -----
 TCACTGAAGACTGATAAAAGCCACCTAATCAAAGAGAAAATCTGGGTGTG
 Gekko_japon -----
 TCACTGAAGACTGATAAAAGCCACCTAATCAAAGAGAAAATCTGGGTGTG
 Python
 TGGAACAATTCTTTGAAGTTTGGAAAAAGTTTACCTAATCACAGAGAAAATCCAGGTGGC
 Boa_constrictor
 TGGAACAATTCTTTGAAGTCTGGAGAAAGTTTGCCTAATCACAGAGAAAATCCAGGTGGC
 Vipera TGGAACAATTCTTTGAAGACT-----
 AATCACAGAGAAAATCCAGGTGGC
 Protobothrops TGGAACAATTCTTTGAAGTCT-----
 AATCAAAGAGAAAATCCAGGTGAC
 Crot_horrid TGGAACAATTCTCTGAAGTCT-----
 AATCACAGAGAACATCCAGGTGAC
 Crot_mitch TGGAACAATTCTCTGAAGTCT-----
 AATCACAGAGAACATCCAGGTGAC

Thamnophis TGGAACAATTCTTTTAACTCT-----
 AATCACAAAGAAAATCCAGATGAC
 Cobra TGGAACAATTCTTTAAAGTCT-----
 AATCAAAGAGAAAATCCAGGTGAT
 Pantherophis TGGAACAATTCTTTGAAGTCT-----
 AATCACAGAGAATATCCAGGTGAC
 Pogona -----CCTTTCATGGTGGGCAAA-----
 AAACAAAAGGAAAATCTGGACACA

 Ornithorhynchus TCCAGAGACGGACTAGCACCG---
 GGAAGGAGCCCTCCTTGCTCCCTAAGGCCCGGGCG
 Monodelphis
 TTCAGGGCTGACACAGCCATGTTGAAAAAAGCTCACCTTGTTCTAAAAGGAGCCCAGCA
 Mus_musculus
 TTTGGAGATGGTGTGCCTACTGTGAGGAAAAATACTCCATATTCTGGAAAGAATCAACTA
 Rattus
 TTTGGAGATGATGTGCCTACTGTGAGAAAAAACTCCAAATTCTGGAAAGAATCAACTG
 Cavia TTGAGAGACAATGTGTCTCTCTG---
 AAGAATGCTCCATGCTCTGCAAAGACCCAGCAG
 Homo
 TTTAGAGATGATGTGTCCACGCTGAGGAGGAACACACCATGTTCTATAAAGAATCAACTG
 Equus
 TTTGGAGATGATGTGTCCCCTCTGAGGAGGAACATAACCATGTTCTATAAAGAATCAACTA
 Ursus
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 Bos
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 Sus
 TTCAAGGATGATGTGTCCACTCTGAGGAGAAGCACACCATGCTCTGTAAAGAGTCAGTTG
 Tursiops
 TTCAGAGATGACATGTCCACTCTGAAGAGGAACACACCACGTTCTATA---AATCAGTTG
 Allig_mississip
 TTTGAAGATGGAACACGAGATCAGGAAAGGGATATGCCATGCTCAAAAAATGCATTGGGC
 Allig_sinensis
 TTTGAAGATGGAACACGAGATCAGGAAAGGGATATGCCATGCTCAAAAAATGCATTGGGC
 Gharial
 TTTGAAGATGGAACACGAGATCAGGAAAGGGATATGCCATGCTCAAAAAATGTATTGGGC
 Crocodilus_nilo
 TTTGAAGATGGAACACAAGATCAGGAAAGGGATATGCCATGCTCAAAAAATGTATTGGGC
 Crocodilus_poro
 TTTGAAGATGGAACACAAGATCAGGAAAGGGATATGCCATGCTCAAAAAATGTATTGGGC
 Aspidoscelis
 TTAGGAGAGAAGATAGCAGGCGTAGAAAAGAACCTACCATGTTCCAAAACACAATTAAC
 Shinisaurus
 TTTGGAGAGGAAGTCGCAGATCTAGAGAAGAGTCCACCATGCTCCAATCCACAATTAAGG
 Ophisaurus
 TTCAGAGAGGAAGCAGCAGTTCTAGAGAAGAGTCCACCATGCTCCAATCCACAATTAAGG

Anolis
 TTCAGAGTGGAAAATGCAGGCTCAGAAAAGAGTCTGCCATGCTCTAACTCACACTTAAGT
 Eublepharis
 TTTGAAAAGGATGCGGCCACTCTAGAAAAGGCCCCACCTTGCTCCAGATCACAATTAAGC
 MournGekko
 TTTGGAGAGGATGTAGCGGGTCTGGAGAAGGCCCCACCCTGCTCCAAATCACAATTAGGC
 Gekko_japon
 TTTGGAGAGGATGTAGCGGGTCTGGAGAAGGCCCCACCCTGCTCCAAATCACAATTAGGC
 Python
 TTTGGGAAGAAGTAGCAGATCTAGAGAAGAGTCCTCCATGCTCCAATCTCAATTAGGC
 Boa_constrictor
 TTTGGGAAGAATAAGTAGCAGATCTAGAGAAGGGTCCTCCATGCTCCAAAATCAGTTAGGC
 Vipera
 TTTGAGGGAGAAGTAGCAGATCTAGGGAAGAGTCCTCCGTGCTCCAATTCTCTATTAGCC
 Protobothrops
 TTTGAGGAAAAAGTAGCAGATCTAGGAAAGAGTCCTCCATGCTCCAATCTCTATTAGCC
 Croc_horrid
 TTTGAGGAAGAAGTAGCAGATCTAGGAAAGAGTCCTCCATGCTCCAATCTCTATTAGCC
 Croc_mitch
 TTTGAGGAAGAAGTAGCAGATCTAGGAAAGAGTCCTCCATGCTCCAATCTCTATTAGCC
 Thamnophis
 TTTGGGGAAGAAGTAGCAGATCTAGAGATGAGTCCTCCATGCTCCAATCTCTATTAGGC
 Cobra
 TTTGGGAAGAAGTAGCAGATCTAGAGATGAGCCCTCCATGCTCCAATCTCTGTTAGGC
 Pantherophis
 TTTGGGGAAGAAGTAGCAGATCTAGAGATGGGCCCTCCATGCTCCAATCTCTATTAGGC
 Pogona
 TTCACAGAGGAAGCCGCAGGTGCACAGAAGAATCTGCCTTGCTCAAATCAAATTAAGC

Ornithorhynchus	AGCCCGAGGGCAGGACTGGCCTTTCCCGAGGCCGGATTG---
CCCCAGCCAAGCCCGCC	
Monodelphis	GGCCAGACAGAAAGCGTGCCTTTTTCTGAAGCTGACTCC---
CTCCAAGCA---AACATG	
Mus_musculus	---GAGACAGGAATTGTGGCCTTTTCTGAAGCCAGCTCT---
TCTCAGCCAAAAACACG	
Rattus	---GAGACAGGAATTATAGCCCTTTCTGAAGCCAGCTCT---
TCTCAGCCAAAAACACA	
Cavia	GGCACAGGGGGAGTCAGATCCTTTCCCAAAGCCAGTGCC---
CCTCAGTCA---AACACA	
Homo	GGCCAAAAGGAAATATGCCCTTTCTGAAGCCAGTTCC---
CTTCAATCAAAGAATACA	
Equus	GGTCAAAGAGGAATTATGCCCATTCCTGAAGCCAGTTCC---
CTTCAACCAAAGAATACA	
Ursus	AGCCAGAGGGGAATTATGCCCTTTCTGAAGCCACTTCC---
CTTCAATCAAAGAATATG	
Bos	AGCCAAAAGGGGAATTAGGCCCTTCCTGAAGCCAGTTCC---
CTTCAATCAAAGAATATA	

Sus	AGTCAAAGGGGAATTATGCCCTTGCCTGAAGCCAATTCC---
CTTCAATCAAAGAATACA	
Tursiops	GGCCAAAGGGGAATTATGCCCTTTCCCGAAACCAGTTCC---
CTTCAATCAAAGAATACA	
Allig_mississip	CAGAATAAGAAA---CAAGGAAGCCCCAAAAAGGGACCA---
GACCCAAGTAGAAATCCA	
Allig_sinensis	CAGAATAAGAAA---CAAGGAAGCCCCAAAAAGGGGCCA---
GACCCAAGTAGAAATCCA	
Gharial	CAGAATAAGAAA---CAAGGAAGCCCCAAAAAGGGGCCA---
GACCCAAGTAGAAATCCA	
Crocodylus_nilo	CAGAATAAGAAA---CAAGGAAGCCCGCAAAGGGGCCA---
GACCCAAGTAGAAATCCA	
Crocodylus_poro	CAGAATAAGAAA---CAAGGAAGCCCGCAAAGGGGCCA---
GACCCAAGTAGAAATCCA	
Aspidoscelis	CAACAGAAGGAACATGAGCAAATCAATGAAGCTGGACTG---
CCTCTATCTGACGATGCC	
Shinisaurus	CAAAAGAATGATCATGAAGCCGACTATGAAACTGGATTA---
CCCCGACCAAGGAATGCA	
Ophisaurus	CAAGAAAATGATCATGAAGCTGACTATGAATCAGGGTTA---
CCCCACAAAGGAAGGTG	
Anolis	CAAGATAGTAAACAAGAAGCCAACCTCCAAAGAGGTTA---
TTCAAATTTAGGAACATG	
Eublepharis	
CAACAGAACGAGCGTGAAGTCAACTATGAAACTGGATTAGCAGCACCAACCAGGAAACCA	
MournGekko	CAAGAGAACGGGCATGAAGTCCACCATGGAAACGGCTTA---
GCACCAACTAGGAATACA	
Gekko_japon	CAAGAGAACGGGCATGAAGTCCACCATGGAAACGGCTTA---
GCACCAACTAGGAATACA	
Python	CAAATAAGAGGTCATGATACTAACTATGAAACTGGATTA---
TTTCCCTCCAAGAGTATA	
Boa_constrictor	CAAGTAAGTGAATCATGATACTACCTATGAAACTAGATTA---
TTTCCCTCCAAGAGTATA	
Vipera	CAAACAAGTGAATCATGATACTATCTATGAAACTGGATTA---
TTTCCCTCCAAGAGTATA	
Protobothrops	CAAACAAGTGAATCATGATACTATCTATGAAACTGGATTA---
TTTCCCTCCAAGAGTATA	
Crot_horrid	CAAACAAGTGAATCATGATACTATCCATGAAACTGGATTA---
TTTCCCTCCAAGAGTATA	
Crot_mitch	CAAACAAGTGAATCATGATACTATCCATGAAACTGGATTA---
TTTCCCTCCAAGAGTATA	
Thamnophis	CAAACAAGTGAATCATGATACTATCTATGAAACTGGATTG---
TTTTCTTCCAAGGGTATA	
Cobra	CAAACAAGTGAATCATGATACTATGTATGAAACTGGATTA---
TTTCCCTCCAAGGGTATA	
Pantherophis	CTAACAAGT-----GATACCATCTATGAAACTGGATTA---
TTTCCCTCCAAGGGTATA	
Pogona	CAAGATCATACGCATGAAACCAACTGTGAAACTGGGTTG---

CCCCATCTGAGAACACA

Ornithorhynchus

CCTTGTTTTCAAAGCAGGCTGAGGGGCGACGTGGACAGTGTCCCGGAGCAGATCCTGGAC

Monodelphis

CCCTGCCGCAAAGTAACCTTAGAGGAGAAGGGAACAATGTTCTTGCAAAAATCTTGGA

Mus_musculus

CCCTGTCTTAAAAGTGACCTTGGAGGAGATCGGAGGGATGTTCTGAAACAATTTTTTGAA

Rattus

GCCTGTCTTAAAAGTGACCTTGGAGGAGATCGGAGGGATGTTCTGAAACAGTTTTTCGAA

Cavia

CTTTGTCTCAGTAATGATCTTGGAGGAGATGGGAACAGCGTTCTGGAACAAATTTTTGAA

Homo

CCTTGCTCAA AAAATGATCTTGGAGGAGATGGGAACAACATTCTGGAACAAGTTTTTGAA

Equus

CCTTGCTCAA AAAAGTGATCTTGGAGGAGATGGGAACAATGTTTTGGAACGAATATTTGAA

Ursus

CCTTGCTCACAAGTGATCTTGGAGGAGATGGGAACAATGTTTTAGAACAATATTTGAA

Bos

CCTTGCCTCAA AAAAGTGATCTT---

GAAGATGGAAACCATGTTTTGGAACAACATTAGAA

Sus

CCTTGCCTCACAAGTGATCTTGGGGGAGATGGAAACAATGTTTTGGAACAATATTTGAA

Tursiops

CCTTGCCTCAA AAAAGTGATCTTGGAGGAGAAGGA---

AACATTTTTGGAACAATATTTGAA

Allig_mississip

CTTTACTTTGAAAGTAATACAAGGGGAGATGGAAACAGTGTGTTTGCCCAAATCTTTGGA

Allig_sinensis

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Gharial

CTTTACTTTGAAAGTAATACAAGGGGAGATGGAAACAGTGTGTTTGCCCAAATCTTTGGA

Crocodilus_nilo

CTTTACTTTGAAAGTAATACAAGGGGAGATGGAAACAGTGTGTTTGCCCAAATCTTTGGA

Crocodilus_poro

CTTTACTTTGAAAGTAATACAAGGGGAGATGGAAACAGTGTGTTTGCCCAAATCTTCGGA

Aspidoscelis

CCTTGCTCTGGAAGCAACATTCGAGGTGACCGGCACAATGTCCTTGAAGGGATTCTAGGA

Shinisaurus

CCTTGTTATGGAAGCAGCACCAGAGGGGATGGACACAATGTCCTTGGATGGATTGTGGGA

Ophisaurus

CCTTGTTATGGAAGCAGCATCAGAGGAGATGGACACAATGTCCTTGGACGGATCGTGGGA

Anolis

CCCTGCCATGGAAGCAACATTCGAGGGGACAGACACAATCCCCTTGCACATCTTG TAGGG

Eublepharis

CCTTGTTATGGAAGAAGCGTCCGAGGGGACGGGCACAGTATCTTTGAATGGATC-----

MournGekko

CCTTGTTATGGAAGAAGCATCCGAGGGGATGGGCACAGTATCCTTGAACGGATCATT---

Gekko_japon

CCTTGTTATGGAAGAAGCATCCGAGGGGATGGGCACAGTATCCTTGAACGGATCATT---
Python
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Boa_constrictor
CTTTGCTCTAGAAATAGCATCAGAGGGGATGGACATACTGTTCTTGCCCATATCATGGGG
Vipera
CCTTGCTCTAAAAC TAGTATCAGAGGGGATGGACATACTGTACTTGCTGATATCGTGGAG
Protobothrops
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Crot_horrid
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Crot_mitch
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Thamnophis
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Cobra
CTTTGCTCTAAAAC TAGTATCAGAGGGGATGGCCATAGTGTCTTGCTCATATTGTGGAG
Pantherophis
CGTTGCTCTAAAAC TAGTATCAGAGGGGATGGACATACTGTTCTTGCTCATATTGTGGAG
Pogona
CATGATTATGGAACAGTCTCAGAGGGGATAGGCACAGTATTCCTGCAGCGATCATGGGG

Ornithorhynchus
CCGGACCCGCGGTGCGGGGAACGACGGCCCGGCTCCCGGAGACCTGGCCGTGGTG---
Monodelphis
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Mus_musculus
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Rattus
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Cavia
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Homo
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Equus
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Ursus
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Bos
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Sus
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Tursiops
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Allig_sinensis

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 Gharial
 GTAAATCAATACAACGGGAGAGACTGGACCAGATCCTGAGAATCACATGGCAGGTCCA
 Crocodilus_nilo
 ATAAATCAATACAACGGGAGAGATGCTGGACCAGATCCTGAGAATCACATGGCAGGTCCA
 Crocodilus_poro
 ATAAATCAATACAACGGGAGAGATGCTGGACCAGATCCTGAGAATCACATGGCAGGTCCA
 Aspidoscelis
 TCAAATCAATCCAAAAGAGAGATTGAAAGAGCAGCTTCCATGAAACTT-----
 Shinisaurus GCAAATCAGTCCAAAAGAGAGTTTGAAAGG---
 GCAGCTTTAAAGCTC-----
 Ophisaurus ACAAATCATGCCAAAAGAGAGTTTGAAAGG---
 GCACCTTTAAAGCTC-----
 Anolis ACAGGTCAGTCC-----TTTGGAAGA---
 GGAACCTTTAAACTTT-----
 Eublepharis ---
 GATCTCCCAAAGAGAGCAGGAAAGGGCCGCTCCTGTCAACCTT-----
 MournGekko -----
 CAGCCCAAAGAGACCATGAAAGGGCAGCTGCAGTCAAGTTT-----
 Gekko_japon -----
 CAGCCCAAAGAGACCATGAAAGGGCAGCTGCAGTCAAGTTT-----
 Python GTGAATCAGCCCAAGAGAGAATTTGAAAGG---
 GCATCCTTAAGGTTT-----
 Boa_constrictor GTGAATCAGCGCAAGAGAGAGTTTGAAAGG---
 GCAACTTTAAGGTTT-----
 Vipera GTAAATCAGCCCAAGAGAGAGTTTGAGAGG---
 GCAACATTAACATTT-----
 Protobothrops GTAAATCAGCCCAAGAGAGAGTTTGAAAAG---
 GCAACTTTAACATTT-----
 Croc_horrid GTAAATCAGCCCAAGAGAGAGTTTGAAAAG---
 GCAGCTTTAACATTT-----
 Croc_mitch GTAAATCAGCCCAAGAGAGAGTTTGAAAAG---
 GCAGCTTTAACATTT-----
 Thamnophis GTAAATCAACCCAAGAGAGAGTTTGAAAGG---
 GCAACTGTAAGGTTT-----
 Cobra GTAAATCAGCCCAAGAGAGAGTTTGAAAGG---
 GCAACTTTAAAGTTT-----
 Pantherophis GTAAATCAGCCCAAGAGAGAGTTTGAAAGG---
 GCAGCTTTAAGGTTT-----
 Pogona GAAAGTGAGTCCAGAAGGGAATTCAGACAG---
 GCAGCTGTAAAAGT-----

 Ornithorhynchus -----
 GTCCCGGAGCGGGATCCGGGGCCAGTGGGCATCAGA-----GGGGAC
 Monodelphis -----
 GCTCCTGAAGAAAATCTCGGGCCAGAAAATATCCAAAGTGAAGGGGGAGGAAGT
 Mus_musculus -----

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 Rattus -----
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 Cavia -----
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 Homo -----
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 Equus -----
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 Ursus -----
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 Bos -----
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 Sus -----
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 Tursiops -----
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 Allig_mississip
 CATGATATCCAGAAGAAGAGCCTTTGCCAGAAGGAATCAAAGTGCTACTTTAGGCAGC
 Allig_sinensis
 CACGCTATCCAGAAGAAGAGCCTTTGCCAGAAGGAATCAGAAGTGCTACTTTAGGCAGC
 Gharial
 CACGATATCCAGAAGAAGGGACTTTGCCAGAAGGAATCAGAAGTGCTACTTTAGGCAGC
 Crocodilus_nilo
 CACGATATCCAGAAGAAGGGACTTTGCCAGAAGGAATCAGAAGTGCTACTTTAGGCAGC
 Crocodilus_poro
 CACGATATCCAGAAGAAGGGACTTTGCCAGAAGGAATCAGAAGTGCTACTTTAGGCAGC
 Aspidoscelis -----
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 Shinisaurus -----
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 Ophisaurus -----
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 Anolis -----
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 Eublepharis -----
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 MournGekko -----
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 Gekko_japon -----
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 Python -----
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 Boa_constrictor -----
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 Vipera -----
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Protobothrops -----
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Crot_horrid -----
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Crot_mitch -----
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Thamnophis -----
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Cobra -----
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Pantherophis -----
CCACAACCACAAGGCATAAGAAATGAAGCT---GTTAGT
Pogona -----
GTTCTGAAAAATCCCCAGAGCCACAAAGGATCAGGAGTCAGGCTCTCGCTAGT

Ornithorhynchus CCGGAACCGGGGCCGGAG---
GCCGGCGCCCCGGGCTTCCAGTGGGTGCCCTGCTTCGGC
Monodelphis GAGGGTCGTGTGAAACAG---
AAAGGAGTGCCTAATATCCAGAAGGTGCCATGCCTCCAC
Mus_musculus GAGGGTGAGATGCAGCAA---
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Rattus GAGGGTGAAATGCAGCAG---
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Cavia GAGGATGACAGGCCGCAA---
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Homo GAGAGTGAGAGGCAACAG---
CAAAGACCATCTAACATTCTGCATTTGCCATGCTTTGGC
Equus GAAGGTGAAAGGCAGCAA---
CAAAGGCCACCTAGCATCCTACAGTTACCATGCTTTGGC
Ursus GAGGATGAAGGGCAGCAA---
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Bos GGGGGCAAAAGGCAGCAA---
CAAAGACCATCTACCATACTAAAGTTACCATGTTTTGAC
Sus GAGAGTGAAAGGCAGCAA---
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Tursiops GAGGGTGAAAGG---CAG---
CAAAGACCATCTAGCATCCTACAGTTACCATGTTTTGGC
Allig_mississip AAAGTTGATATGAAAGAA-----
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Allig_sinensis AAAGTTGATATGAAAGAA-----
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Gharial AAAGCTGATATGAAAGAA-----
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Crocodilus_nilo AAAGCTGATATGAAAGAA-----
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Crocodilus_poro AAAGCTGATATGAAAGAA-----
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Aspidoscelis

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Shinisaurus

GAAGTTGATAGGAAAGAACAACATGCAACACTTGGGTTCAAGAGAATCCCGTGCTTTGCA

Ophisaurus

GAAGTTGGTGGGAAAGAACAGCAGGCAGAACTTGGATTCAAGAGAACCCCGTGCTTTAGA

Anolis

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Eublepharis

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MournGekko

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Gekko_japon

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Python

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Boa_constrictor

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Vipera

GAAATTGATAGGAAGGAACACCGTGCAATACAAGGGTTTGGTTGGACACCATGCTTTGGA

Protobothrops

GAAATTGATAGGAAGGAACACCGTGCAACACAAGGGTTTGGGTGGACACCATGCTTTGGA

Crot_horrid

GAAATTGATAGGAAGGAACACCGTGCAACACAAGGGTTTGGGTGGACACCATGCTTTGGA

Crot_mitch

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Thamnophis

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Cobra

GATATTGATAGAAAGGACCACCATGCAACACAAGGGTTTGGATGGACACCATGCTTTGGA

Pantherophis

GAAACTGATAGGAAGGAACACCGTGCAACCCAAGGGTTTGGGTGGACACCATGTTTTGGA

Pogona

GAAGATGGCAGGAAAGAACAACATGCCGCACTTGAATCAAGAGGATCCCTGCTTCGCC

Ornithorhynchus

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Monodelphis

TCTAAACTAAAGGACCACCTCCTTTCCAGCACAGGTGCTCCACTTGGCAAGAGGAGACCA

Mus_musculus

TCCAAT---

TCAAATTTCACTCTTCTACCCTGGACCTCCAATTAACAACAGAAGACCA

Rattus

TCCAATTTAGCAAACCTTCACTCTTCTAGCACTGGACCTCCAACCTAACAATGGAGGGCCA

Cavia

TCCAACCTAACACAGCTTCACTCCTCTAGCACTGGAACCTCCATCTAGCAGTAGAAGACCA

Homo

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Equus

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Ursus

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Bos

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Sus

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Tursiops

TCCAATTAACAAAGTATCACACCTCCAGCACTGGAACTCCATCTAGCATTGGAAGGCCA

Allig_mississip AGCTGGTTAAGGCCA---

CATTTGTCCAGCACTGGAGTGCCACCTGGTGTGAGAAAGCAA

Allig_sinensis AGCTGGTTAAGGCCA---

CATTTGTCCAGCACTGGAGTGCCACCTGGTGTGAGAAAGCAA

Gharial AGCTGGTTAAGGCCA---

CATTTGTCCAGCACTGGAGTGCCACCTGGTGTGAGAAAGCAA

Crocodylus_nilo ACCTGGTTAAGGCCA---

CATTTGTCCAGCACTGGAGTGCCACCTGGTGTGAGAAAGCAA

Crocodylus_poro ACCTGGTTAAGGCCA---

CATTTGTCCAGCACTGGAGTGCCACCTGGTGTGAGAAAGCAA

Aspidoscelis AACTGGTTAAAACAG---

TATTTACCTAGCACTGGAGCTCCATCTGGTGTGATCAACAGAAC

Shinisaurus AGCTGGTTAAAACAG---

TATTTATCTAGCACTGGAGCTCCACCTGGTGTGATCAACAGCAC

Ophisaurus AGCTGGTTAAGCAG---

TATTTATCTAGCACAGGAGCTCCATCTGGTGTGATCAACAGCAT

Anolis AGCTGGTTAAGCAG---

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Eublepharis AACCAGTTACAGCAG---

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MourningGekko AACCGTTAAGCAG---

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Gekko_japan AACCGTTAAGCAG---

TTTTTATCCAGCACAGGAGCTCCATCTGGTGTGACACACAGCAA

Python AGTTGGTTAAGCAG---

CATATATCCAGCACTGGAACCTCATTAGGGGATCAGCCTTCT

Boa_constrictor AATTGGTTGAAGCAG---

CATATATCCAGCACTGGAACCCATTAGGAGATCAACTTTCT

Vipera AGTTGGTTAAAACAG---

CATATATTTAGTACTGGAGATCCATTAGTGGATCAATCTTCT

Protobothrops AGTTGGTTAAAACAG---

CATATATTTAGTACTGGAGATCCATTAGTGGATCAATCTTCT

Crot_horrid AGTTGGTTAAAACAG---

CATATATTTAGTACTGGAGATCCATTAGTGGATCAATCTTTT

Crot_mitch AGTTGGTTAAAACAG---

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Thamnophis AGTTGGTTAAAACAG---

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Cobra AGTTGGTTAAAACAG---
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Pantherophis AATTGGTTAAAAGAG---
CATATCTCTAGTACTGGAGACCCATTAGTAGATCAACCTTCT
Pogona AGCTGGTTAAAACAG---
TATTTATCTAGCACTGGAGCTCCATCTGGTGATCAACAGCAC

Ornithorhynchus GACCCATCCGAGCCGGTGTC-----
ACCGCACCCGCAGAGACCCTGGACGCG---GTC
Monodelphis GGCCTGTCCACTGGAGAGCCA-----
GCCATGGTCTCTGCCAGCCAGCAGCACATTG
Mus_musculus ACCCTACTTAATGGTGCTCTC-----
TCCACACCCACTGAAAGTCCTAACACA---TTG
Rattus AGCCTACCTAATGGTGCTCTC-----
TCCACACCCACCGAAAGTCCTGACACA---TTG
Cavia GGCCATCTGGTGGGGATCTA-----
ACTAAGCCTACTGAAAATCCTAACACA---TTT
Homo AGCCATTTGATGGGGATTCA-----
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Equus GGCCTATTTGACGGGGATCCA-----
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Ursus GGCCATTTGATGAAGATCCA-----
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Bos GGCTCATTTGATGGGGATCCA-----
ATTATGCCTACTGAAATTCCTAACTCA---TTG
Sus GACTCATTTGATGGGGATCCA-----
ATTATGCCTACTGAAACTCCTAACTCT---TTG
Tursiops GGCTCATTTGATGGGGATCCA-----
ATTACGCCTACTGAAATTCCTAACTCA---CTG
Allig_mississip
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Allig_sinensis
GAATCAATTTATGGAGACCAACTACTTGTAATCCCCACTAGAAAACCAAACCTT-----
Gharial
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Crocodilus_nilo
GAATCAATTTATGGAGACCAACTGCTTGTAATCTCCACTAGAAAACCAAACCTC-----
Crocodilus_poro
GAATCAATTTATGGAGACCAACTGCTTGTAATCTCCACTAGAAAACCAAACCTC-----
Aspidoscelis AACTTATTTAATGCAGAAAG-----
CCAACACCCACCGAAAGCTGAACATC-----
Shinisaurus
GACCTATTT-----
Ophisaurus GACCTCTTTTATGGAGAGGAT-----
CCAGTGCCCACTGGAAAGCCAGACATC-----
Anolis GATCCATTTTACGGAGAGAAT-----

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 Eublepharis GACCTGTTTTATGCGGAGAAT-----
 CCCATGCTCATCGGAAAGTCGTTTCATC-----
 MournGekko GATCTATTTTATGCAGAGAAT-----
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 Gekko_japon GATCTATTTTATGCAGAGAAT-----
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 Python GGTGTCTTTTATGCAGAGCAT-----
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 Boa_constrictor GATGTCTTTTATGCAGAAAAT-----
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 Vipera GATATCTTTTATGCAGAGAAT-----
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 Protobothrops GATATCTTTTATGCAGAGAAT-----
 TCAATGCAGCCTGGAAAACCTATC-----
 Crot_horrid GATATCTTTTATGCAGAGAAT-----
 TCAATGCAGGCTGGAAAACCTATC-----
 Crot_mitch GATATCTTTTATGCAGAGAAT-----
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 Thamnophis GATATCTTTTATTTAGAGAAT-----
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 Cobra GATGTCTTTTATTTAGAGAAT-----
 TCAATGCATGCTGGAAAACCTATC-----
 Pantherophis GATGTCTTTTATTTAGAGAAT-----
 TCAATGCATGCTGGAAAACCTATC-----
 Pogona AATCTCTTTCATGGAGAGACT-----
 CCAGTCCCAACCAGCAGGCCAAACGAC-----

 Ornithorhynchus TCTGGGCTTCCGACCGGGGTGCCTTCCGAGGGCCCCAGCCTT---
 CCCC GTTCATCAGAA
 Monodelphis
 ACTGGATTGACAGCTAGGGAGCAGCTTGGTGGTACAAATATCGACCCACTCGTTGCCTCA
 Mus_musculus
 GTTGGGTTAGCTACTAGGGAACAACCTTAAAAGTATAAACGTAGATAAACTTAATGCAGAT
 Rattus
 GTTGGGTTAGCTACTAGGGAACAATTTAAAAGTATAAATGTCGATCAACTTAATGCAGAT
 Cavia
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 Homo
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 Equus
 GCTGGGTTAGCTACTGTTGGGAGAGTTTCAGAGTATAAGTGTAGACCCACTTAATGCAGAT
 Ursus
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 Bos
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 Sus

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Tursiops
GCTGAGTTAGCTACCAGGGCACAGTTTCAGAATATAAATGTAGACCCACTTAACGCAGAT
Allig_mississip ---
CAGTTGGAAACAGAGGCAAAGATCCCAAGTGCTGAGCCA-----
Allig_sinensis ---
CTGTTGGAAACAGAGGCAAAGATCCCAAGTGCTAAGCCA-----
Gharial ---
CAGTTGGAAACAGAGGCAAAGATCCCAAGTGCTGAGCCA-----
Crocodilus_nilo ---
CAGTTGGAAACAGAGGCAAAGATCCCAAGTGCTGAGCCG-----
Crocodilus_poro ---
CAGTTGGAAACAGAGGCAAAGATCCCAAGTGCTGAGCCG-----
Aspidoscelis ---
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Shinisaurus

Ophisaurus ---
CTCCACCCTGAACCACAGCCCATCTCTAGCACTAATCCATCCCATAATGTAGAAGAA
Anolis ---
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Eublepharis ---
ATATTGCCTGAACCGCATCCCCTGACTAGCACTAACCCTTACGACACAGAGGAA
MournGekko ---
ATATTGCCCGAGCCACATCCCCGTCCAGCACTGATCCTTCTTATGACACAGAAGAG
Gekko_japon ---
ATATTGCCCGAGCCACATCCCCGTCCAGCACTGATCCTTCTTATGACACAGAAGAG
Python ---
ATGCTACCTGAACCCCAGCCAATCTCTAGCACAGTTCCATCCCACAGTATAGGAGAA
Boa_constrictor ---
ATGCTGCCTGAACCCCAGCCAATCTCTAGTACAGTTCCATCCCATGATATA---GAA
Vipera ---
ATGCTGCCTGAACCCCAACCAATGACTAGCACAGTCCATCTCAAGATGTAGGAGAA
Protobothrops ---
ATGCTGCCTGAACCCCAACCAATGACAAGCACAGTCCATCTCAAGATGTAGGAGAA
Crot_horrid ---
ATGCTGCCTGAACCCCAACCAATGACAAGCACAGTCCATCTCAAGATGTACGAGAA
Crot_mitch ---
ATGCTGCCTGAACCCCAACCAATGACAAGCACAGTCCATCTCAAGATGTAGGAGAA
Thamnophis ---
ATGCTGCCTGAACCCAGCCAATGTCTAGCACAGTCCCATCTCAAGATGGAGGAGAA
Cobra ---
ATGCTGCCTGAACCCAGCCAATGTCTAGCACAGCCCCATCTCAAGATGTAGGAGAA
Pantherophis ---
ATGCTGCCTGAACCCAGCCAGTGTCTAGCACAGTCCCATCTCAAGATGGAGGAGAA
Pogona ---
ATGCCACCTGAATCAAAGCCCATCTCTAGCACTAATCCATCTCATGATGATCGAGAA

Ornithorhynchus ---
 CTTTCACCGCCCTTCAAGACCCCTCCAGTGGGAAGTGGCAGACGGTCCGGAACAACAG
 Monodelphis -----GAGCCACCTCTTTCTTTTCCA-----
 TCTCTTTCAATCCCAAAGAATGCAGAG
 Mus_musculus ---GAACACACTTACTCGAATCTTTT-----CAA---
 GGAACCAGTCCACAGGACCAA
 Rattus ---GGACACACAACACTTGAATCTTTT-----CAA---
 GACACCAGTCAACAGGACCAA
 Cavia ---GGACACACTCCATTTGAATCTTTT-----
 CAAAGAGGGACTGATCCTCAGGACCAG
 Homo ---GAACACAGTCCATTTGAATTCCTT-----
 CAAAGAGGGACCAATGTACAGGACCAG
 Equus ---GAGCACACTTCATTTGATTACCTT-----
 CAAATAGGGACCGATCCAGAAGACCAG
 Ursus ---GAACACACTCCATTTGATTCTCTT-----
 CAATTAGGGACCAACCCACAGGACCAT
 Bos ---GATCACACTCCATTTGATCCTCTT-----
 CAAGTAGGGACCAATCCACAGGACCAG
 Sus ---GAACACACTCCATTCGATTCTCTT-----
 CAAATAGGGACCAATCCACAGGACCAG
 Tursiops ---GAACACACTCTATTTGATTCTCTT-----
 CAAGTAGGGACCAATCCACAGGACCAG
 Allig_mississip -----
 CCAAACGGAGTCAGCTCTCTAACAGGAGGCATGGCAAATGATTCAGAGGAAAGG
 Allig_sinensis -----
 CCAAACGGAGTCAGCTCTCTAACAGGAGGCATGGCAAATGATTCAGAGGAAAGG
 Gharial -----
 CCAAACGGAGTCAGCTCTCTAACAGGAGGCATGGCAAATGATTCAGAGGAAAGG
 Crocodilus_nilo -----
 CCAAACGGAGTCAGCTCTCTAACAGGAGGCATGGCAAATGATTTAGAGGAAAGG
 Crocodilus_poro -----
 CCAAACGGAGTCAGCTCTCTAACAGGAGGCATGGCAAATGATTCAGAGGAAAGG
 Aspidoscelis ---
 AATCCAGTGAAATCCAGTTCTCCTGGAAGAGAAGTGGTAGATCAAGCAAATGAAAGT
 Shinisaurus

 Ophisaurus ---
 AACCTGTTGGACTTCAGTTCTCCAGGAGAAGAATTGGCGGAACAACCCAATGAATGG
 Anolis ---
 AAACCACTGAAAATCAATGCTCCAGAAGAGGAATGGGCTAAACTAGCCACTCAAAGT
 Eublepharis ---
 AAGCCATTAACACCCAGTGCTCTGGGAGAAGATTTGGCTGACCAGCCAAAGGAAAGG
 MournGekko ---
 AAACCCTTAACGCCAGTTCTCTGGGAGAAGATCTGGCTGATCAACCAAATGAAAGG
 Gekko_japon ---
 AAACCCTTAACGCCAGTTCTCTGGGAGAAGATCTGGCTGATCAACCAAATGAAAGG

Python ---GATCATATAAAAATTCAGTACCCCA---
 GAAGAATTGGTGGGACAACCAAATGAAAGG
 Boa_constrictor ---GATCAATTAAAATTCAGTTCCCA---
 GAAGAATTGGTGGGACAACCAAATGAAAGG
 Vipera ---GATCAATTAAAAC TCACTTCTCCA---
 GAAGAACAGGTGGGACAACCAAATGAAAGG
 Protobothrops ---GATCAATTAAAAC TCACTTCTCCA---
 GAAGAACAGGTGGGACAACCAAATGAAAGG
 Croc_horrid ---GATCAATTAAAAC TCACTTCTCCA---
 GAAGAACAGGTGGGACAACCAAATGAAAGG
 Croc_mitch ---GATCAATTAAAAC TCACTTCTCCA---
 GAAGAACAGGTGGGACAACCAAATGAAAGG
 Thamnophis ---GATCAATTAAAAC TCACTTCTCCA---
 GGAGAACAGGTGGGACAACCAAATGAAGGA
 Cobra ---GATCAATTAAAAC TCACTTCTCCA---
 GAAGAACAGATGGGACAACCAAATGAAAGG
 Pantherophis ---GATCAATTAAAAC TCACTTCTCCA---
 GAAGAACAGGTGGGACAACCAAATGAAAGG
 Pogona
 GGAAAACACCTGAAATTTGGTTCTCCAGGAGAAGAATGGGTAGAGCGACCAAATGAAACA

Ornithorhynchus GGAGCCGACTGCTCGTTGCTCCAGAAC---
 Monodelphis TTTCAGGACTGCCTGCTGCTCCACAGC---
 Mus_musculus -----GGCTGCTTACTGCTTCAGGCT---
 Rattus GCACACGGCTGTTTACTGCTTCAGGCT---
 Cavia ATACAAGACTGCTTACTAATTCAGGTC---
 Homo GTACAAGACTGCTTACTACTTCAGGCC---
 Equus GTGCAAGACTGCCTACTACTTCAGGCC---
 Ursus GTGCAAGACTGCTTACTACTTCAGGCC---
 Bos GTTCAAGACTGCTTACTACTTCAGGCC---
 Sus GTGCAAGATTGCTTATTACTTCAGGCC---
 Tursiops GTGCAAGACTGCTTACTACTTCAGGCC---
 Allig_mississip AGACCAGACTGTCTACTACTGCAAAAC---
 Allig_sinensis AGACCAGACTGTCTACTACTGCAAAAC---
 Gharial AGACCAGACTGTCTACTACTGCAAAAC---
 Crocodilus_nilo AGACCAGACTGTCTACTACTGCAAAAC---
 Crocodilus_poro AGACCAGACTGTCTACTACTGCAAAAC---
 Aspidoscelis GTGCCAGATTGTTTCTGCTCCAGAACAAA
 Shinisaurus -----
 Ophisaurus ATACCTGACTGTTTACTGCTCCAAAACAAA
 Anolis ACTCCAGACTGCTTACTTCTCCAAAAGAAA
 Eublepharis ACACCAGACTGTTTGCTGCTCCAAAAA---
 MournGekko ACATCAGACTGTTTACTTCTCCAGAAA---
 Gekko_japon ACATCAGACTGTTTACTTCTCCAGAAA---
 Python ACAACAGATTGTTTACTACTCCGAAATAAG
 Boa_constrictor ATAACAGATAGTTTACTACTCCAAAATAAG
 Vipera ACAACAGATTGTTTACTCCTCCATGAG---

Protobothrops	ACAACAGATTGTTTACTCCTCCATGAG---
Crot_horrid	ACAACAGATTGTTTACTCCTCCATGAG---
Crot_mitch	ACAACAGACTGTTTACTCCTCCATGAG---
Thamnophis	ACAATAGATTGTTTAGTCCTCCAAAATGAG
Cobra	ACAACAGATTGTTTACTCTTCCAAAATGAG
Pantherophis	ACAACAGATTGTTTACTCCTCCATGAG---
Pogona	ACACCAGACTGTTTACTGCTCCAAAAGAAA

Reptile-AMBNseqsAAs-Aln.txt

CLUSTAL format alignment by MAFFT (v7.397)

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Allig_sinensis ---MNVWML-MLCLLGTGFALPMYPQHTGTRGMASMSLE-
MRQYGRQNM-NMLPQ-YGR-
Allig_mississip ---MNVWML-TLCLLGTGFALPMYPQHTGTRGMASMSLE-
MRQYGRQNM-NMLPQ-YGR-
Crocodilus_poro ---MNVWML-TLCLLGTGFALPMYPQHTGTRGMASMSFE-
MRQYGRQNM-NMLPQ-YGR-
Gharial ---MNVWML-
TLCLLGTGFALPMYPQNTGTRGMASMSLEKMRQYGRQNM-NMLPQ-YGR-
Caiman ---MNVWML-TLCLLGTGFALPMYPQHTGTRGMASMSLE-
MRQYGRQNM-NMLPQ-YGR-
Cobra ---MKQWTF-
VLCLLGTCSALPILPRHAGIPGMGSISLEGMRQLGGPSIPKVLQPQ-YGQT
Thamnophis ---MKQWTF-
VLCLLGTCSALPVLPRHAGIPGMGSISLEGMRQLGGPNVPKVLQPQ-YGQT
Crotalus_horrid ---MKQWIF-
ALCLLGTCSALPILPHHAGIPGMGSISLEGMRQLGGPSISKVLQPQ-YGQT
Crotalus_mitche ---MKQWIF-
ALCLLGICCSALPILPHHAGIPGMGSISLEGMRQLGGPSISKVLQPQ-YGQT
Protobothrops ---MKQWIF-
ALCLLRTCSALPILPHHAGIPGMGSISLEGMRQLGGPSISKVLQPQ-YGQT
Vipera ---MKQWIY-
VLCLLGTCTALPILPHHAGIPGMGSISLEGMRQLGGPSISKVLQPQ-YGQT
Pantherophis ---MKQWTF-
VLCLLGTCSALPILPRHAGIPGMGSISLEFTRHIGGLWVPQANPRLYGQT
Boa ---MKQWIF-
VLCLLGTCSALPILPRHAGIPGMGSISLEGMRQLGGPSIPNIFPQ-YAQT
Python_mulurus ---MKQWIF-
VLCLLGSCSALPILPRHAGIPGMGSISLEMMRKLGGPGIPQEDVT-YAQP
Ophisaurus ---MKQWIL-
VSCLLGICCSALPILPQHAGIPGLGSISLERLRQFGRPNMPNV--Q-YAQP
Shinisaurus ---

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MKQWILVVSCLLGICSTLPIRPOHAGIPGIGSISLEGMROFGRPNMNPVLPQ-YAQP
 Pogona ---MKQWIL-
 VSSLLGICSALPILPQHAGIPGLGSISLETMRQMGGRNGPNALSQ-YAMP
 Anolis ---MKQWML-
 VSSLLGICSALPLFPQHAGIPGMGSISLERTRQLGGLNIPPAVPQ--ALP
 Gekko ---MKRWIL-
 VSCLLEICSAMPILLQHSGIPGIGSISLEXXXXXXXXXXXXXXXXXXXXX-YARH
 MournGecko ---MKRWIL-
 VSCLLEICSAMPILLQHSGIPGIGSISLEXXXXXXXXXXXXXXXXXXXXX-YARH
 Eublepharis ---MKRWIL-
 VSCLLGICSAMPMLPQHGPMPGMGSISLXXXXXXXXXXXXXXXXXXXXX-YARH
 Aspidoscelis MKDLKQWIL-
 FSWLLGICSALPXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX----L
 :: * ** ::*

Allig_sinensis YDYGEFNSVWLHGLLPPHSS-
 FPWLQQRPQERETQQYEYAMPVHPPPLPSQQTPLQPQQ
 Allig_mississip YDYGEFNSVWLHGLLPPHSS-
 FPWLQQRPQERETQQYEYAMPVHPPPLPSQQTPLQPQQ
 Crocodilus_poro YDYGEFNSVWLHGLLPPHSS-
 FPWLQRRPQEHETQQYEYAMPVHPPPLPSQQTPLQPQQ
 Gharial YDYGEFNSVWLHGLLPPHSS-
 FPWLQRRPQEHETQQYEYAMPVHPPPLPSQQTPLQPQQ
 Caiman YDYGEFNSVWLHGLLPPHSS-
 FPWLQQRPQEHETQQYEYAMPVHPPPLPSLQTPLOPQQ
 Cobra YSYADPFNSMWMHNFLPSHSS-FYLIRQRPQ-
 HETQQYEYTMPVHPPPLPS-QTPTLLQQ
 Thamnophis YSYADPFNSMWMHNFLPSHSS-FYLIRQRPQ-
 HETQQYEYTMPVHPPPLPS-QTPTLLQQ
 Crotalus_horrid YSYADPYHSMWMHNFLPSHSA-FYLIRQRPQ-
 DETQQYEYTMPVHPPPLPS-QTPTLLQQ
 Crotalus_mitche YSYADPYHSMWMHNFLPSHSA-FYLIRQRPQ-
 HETQQYEYTMPVHPPPLPS-QTPTLLQQ
 Protobothrops YSYADPYHSMWMHNFLPSHSS-FYLIRQRPQ-
 HETQQYEYTMPVHPPPLPS-QTTTLLQQ
 Vipera YSYADPYHSMWMHNFLPSHSS-FYLIRQRPQ-
 HETQQYEYSMPVHPPPLPS-QTPTLLQQ
 Pantherophis YSYADPFNSMWMHNFLPSHSS-FYLIRQRPQ-
 HETQQYEYTMPVHPPPLPS-QTPTLHQQ
 Boa YSYADPFHSMWMHNFLPSHSS-FYLIRQRPQ-
 PETQQYEYSMPVHPPPLPS-QTPTLLQQ
 Python_mulurus YSYADPFHSMWMHNFLPSHSS-FYLIRQRPQ-
 HETQQYEYSMPVHPPPLPS-QTTTLLQQ
 Ophisaurus YTYNDPFHSMWMHNFLPSHSS-
 FYWIKRRPQEHETQQYEYSMPVHPPPLPSQQTPTLLQQ
 Shinisaurus YTYADPFHSMWMHNFLPSHSS-
 VYWMSRRPQEHGTQQYEYSMPVHPPPLPSQQTPTLLQQ

Pogona YSYGDLFFPPWMHNHLPPHSS-
 FYWLRQRPQDHETQRYEYTMPVHPPPLPSQQTPTLLQR
 Anolis YSYADPFHSMWGRSFLPSHTF-
 LWMTQGGPQRQDTQQYEYAMPVHPPPLPSLQTPIQFAE
 Gekko YTYADPFH-
 MWMHNFLPSHSSPSFWGKRRRLHEHDTQQYEYSMPVHPPPLPSQQTPL--QP
 MournGecko YTYADPFH-
 MWMHNFLPSHSSPSFWGKRRRLHEHDTQQYEYSMPVHPPPLPSQQTPL--QP
 Eublepharis YSYSDPFH-
 VWIHNFLPPHSSPPYWGKRRRIHDHDTQQYEYTMPVHPPPLPSQQTPI--LH
 Aspidoscelis YTYADPFAPLWIRNFLRPQPS--YWIK-IPQ----
 QQYEYSLPVHPPPLPSQQTPTIPQP
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Allig_sinensis PRLQAQNP-SLRSTLP--
 SKQGQIQONEVLPPVQVGOPPLQOGELPGI--QQLVPAEKQL
 Allig_mississip PRLQAQNP-SLHSTLP--
 SKQGQIQONEVLPPIQVGQPSLQOGELPGI--QQLVPADKQL
 Crocodilus_poro PRLQAQNP-SLHSMLP--
 SKQGQIQONDVLPPIQVGQPPLOOGELPGI--QQLIPADKQL
 Gharial PRLQAQNP-SLHSMLP--
 SKQGQIQONEVLPPIHVGQPPLOOGELPGI--QQLIPADKQL
 Caiman PRLQAQNP-SLRSTLP--
 TKQGQIQONEALLPVQVGQPPLOOGELPGI--QQLIPADKQL
 Cobra PGIQDQPHYHYAHFLP--
 TRQVQIQHYDVQPPFHPKQFSPSEGNQLGV--QQQLS-LDRHA
 Thamnophis PGIQEQPHYHYAHFLP--
 TRQVQMQUHYDVQPPFHPKQFSPSEGNQPDV--QQQLS-LDRQA
 Crotalus_horrid PGIQEQPPYHYTHFLP--
 TRQVQIQHYDVQPAFQPKQFSPSEGNQPDV--QQQLS-LDRQT
 Crotalus_mitche PGIQEQPPYHYTHFLP--
 TRQVQIQHYDVQPAFQPKQFSPSEGNQPDV--QQQLS-LDRQT
 Protobothrops PGIQEQPPYHYTHFLP--
 TRQVQIQHYDVQPAFQPKQFSPSEGNQPDV--QQQLS-LDRQT
 Vipera PGIQEQPPYHYTHFLP--
 TRQVQIPHYDVQPAFQPKQFSPSEGNQPDV--QQQLS-LDRQT
 Pantherophis PGIQEQPHYHYAHFLP--
 TRQVQLQHYDVQPPFHPNQFSPSEGNQPDV--QQQLS-LDR--
 Boa PGIPEQPNHHYTHFIP--
 TRQLQTQHYDVQPVFQPKQFSPSEGNPDI--QQQLSPSDRQT
 Python_mulurus PGIQEQPHYHYTHFIP--
 TRQMQIQNYDVQPAFQPNQFSPSEGNQPDV--QQQPSPSDRQT
 Ophisaurus PGVIEQHRYPFINLSP--
 TRQVQLQOYDMQPPFQQNPYALPEGNQPVL--QQLPPPDRQT
 Shinisaurus PGIQEQPHYSFTHLIP--
 TRQVQLHRYDMQPPFQQNPALPEGNQPVL--QQLPPPDRQT

Pogona PGIPEQPHYQFTDLTP--TMQAQLQOYEMQPPFQQTP--
 LPEGNQPVVPQKKRPPLDRQT
 Anolis PRLPEQFFFQITNLIP--TRQVQIPRYAIQPSIQQ-
 TFQQVEAHPPVDPQQQLPAERQT
 Gekko
 PGIQEQFPFLLANQIPYTPRQIQPQQYDMQPPFQQKPFLOPEGRHPVV-QQLQ-LPDRQM
 MournGekko
 PGIQEQFPFLLANQIPYTPRQIQPQQYDMQPPFQQKPFLOPEGRHPVV-QQLQ-LPDRQM
 Eublepharis
 HGVQEQFPILVTNQIPFSTRQGQLQOYDIQPPFQQKLFQQEGHHPVV-QQLL-PLDRQT
 Aspidoscelis AGRQDNPHYQLTNRIP--ARQIQLOQYNF-----
 PFLQLEGNQPGI-----PSDRQN

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Allig_sinensis -QLPAL-
 EYSGHLGOMMYPLVHQLVHQGPMQPQQQSALHPALFYMSYAANQGGAPARL-G
 Allig_mississip -QLPAL-
 EYSGHLGOMMYPIVHQLVHQGPMQPQQQPALHPALFYMSYAANQGGAPARL-G
 Crocodilus_poro -QLPAL-
 EYSGHLGQVMYPIVHQLVHQGPMQPQQQPALHPALFYMSYGANQGGAPARL-G
 Gharial -QLPAL-
 EYSGHLGOMMYPIVHQLVHQGPMQPQQQPALHPALFYMSYAANQGGAPARL-G
 Caiman -QLPAL-
 EYSGHLGQVMYPIVHQLVHQGPMQPQQQPALHPALFYMSYAANQGGAPARL-G
 Cobra QQLPAIQDYSGTLSQ-IYPGLLG-
 TQQNTGQQPQQQSIYPNLQYMSYVANKG-APTRL-G
 Thamnophis QQLPAIQDYSGTLGQ-IYPGLFG-
 TQQNTAQQPQQRSIYPNLQYMSYVANKG-VPTRL-G
 Crotalus_horrid QQLPVIQDYSGTLGQ-IYPGLFG-
 TQQNTAQQPQQQSIYPNLQYMSYVANKE-APARL-G
 Crotalus_mitche QQLPVIQDYSGTLGQ-IYPGLFG-
 TQQNTAQQPQQRSIYPNLQYMSYVANKG-TPARL-G
 Protobothrops QQLPAIQDYSGTLGQ-IYPGLFG-
 TQQNTAQQPQQRSIYPNLQYMSYVANKG-APARL-G
 Vipera QQLPAIQDYLGTLGQ-IYPGLFG-
 TQQNTAQQPQQRPIYPNLQYMSYVANKG-APTRL-G
 Pantherophis -XLPAIQDYSGTLGQ-IYPGLFG-
 TQQNTAQQPQLQSIYPNLQYMSYIANKG-VPARL-G
 Boa QQLPAVQEYSGTLGQAIYPGLFG-
 TQQNSARQPQQRSIYPNLQYMSYIANQG-APTRL-G
 Python_mulurus QQLPAIQEYSFKNIM-IYPGLFG-
 TQQNTAQQPQQRYIYPSLQYMSYVANQG-APTGL-G
 Ophisaurus QQLPAVQEYSGTLGQ-IYPGLHG-
 TQQDPAQPPPQRSMYPSLYLPHYVANQGGAPARL-G
 Shinisaurus QQLPAVQEYSGTLGQAIYPGLHG-
 TQQDPAQPSQQQSMYPSLYYMPYIANQGGAPARL-G

Pogona QQ-----IYLGLHG-
 NQQDQAQPPPPQQSIYPNLYYMPYVANQGAAPGRL-G
 Anolis HQ-----IYPALHG-
 TQQDPSQQLQQQSIYPSLYYMPYVANQGAAPARQ-G
 Gekko QQLS-FQEYLRTLGTIYPGLLT-
 TPQDPVQPPQQQSIYPSMYLSSYAANQGAAPATL-G
 MournGecko QQLS-FQEYLRTLGTIYPGLLT-
 TPQDPVQPPQQQSIYPSMYLSSYAANQGAAPATL-G
 Eublepharis -QLP-FQEYSATLGQAIYPSLLG-
 TPQEPVQPPQQRSIYPSLYYMPYVANQGAAPGRLGG
 Aspidoscelis EQLPAIQEYLGTLDQ-----RG-
 PQQDLVQPPQQQPVHPNLYYMSYVANQGGAPARL-G

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Allig_sinensis IVSSEMLGGRGGVPAYGAMIP-----GFRGMPQDP-
 ALQGDFTTEDDNPATAHNPAI
 Allig_mississip IVSSEMLGGRGGVPAYGAMIP-----GFRGMPQDP-
 ALQGDFTTEDDNPATAHNPAI
 Crocodilus_poro IVSSEMLGGRGGAPAYGAMIP-----GFRGMPQDP-
 ALQGDFTTEDDNPATAHNPAF
 Gharial IVSSEMLGGRGGAPAYGAMIP-----GFRGMPQDP-
 ALQGDFTTEDDNPATAHNPAF
 Caiman IVSSEMLGGRGGVPAYGAMIP-----GFRGMPQDP-
 ALQGDFTTEDDNPATAHNPAI
 Cobra IVSSEEMQGGGFGAPAYRAAGPHGFPMDFRFGNMPLNN-
 GQPGDYTVEDDQLGITEQPEV
 Thamnophis IVSSEEMQGGGFGAPAYQATGPHGFPIDARFGNMPLNR-
 GQPGDYTVEDDQLGITEQPEV
 Crotalus_horrid IVSSEEMQGGGFGAPAYRAAGPHVFPMDARFGNMPLNR-
 GQPGDYTVEDDQLGITEQPEV
 Crotalus_mitche IVSSEEMQGGGFGAPAYRAAGPHVFPMDARFGNMPLNR-
 GQPGDYTVEDDQLGITEQPEV
 Protobothrops IVSSEEMQGGGFGAPAYRAAGPHVFPMDARFGNMPLNR-
 GQPGDYTVEDDQLGITEQPEV
 Vipera IVSSEEMQGGGFGAPAYRAAGPHVFPMDARFGNMPLNR-
 GQPGDYTVEDDQLGITEQPEV
 Pantherophis IVSSEEMQGGGFGAPAYRAAGSHGFPMDFRFGNMPLNR-
 GQPGDYTVEDDQLGITEQPKV
 Boa VVSSEEMQGGGFGAPAYRAAGPHLFPMDARFGNIPLNR-
 GQPGDYTVEDDQLGITEQPEV
 Python_mulurus IVSSEEMQGGGFGAPAYRAAGPHLFPMDARFGNMPLNR-
 GQPGDYTVEDDQLGITEQPEV
 Ophisaurus IVSSEEMQGGGLGAPAYRAGGNLFPMNTRFVNMPQNI-
 GQPGDYTVEDDQLGITEQPEL
 Shinisaurus IVSSEEMQGGGLGAPAYRAASPDLFAMDARFGNMPLNR-
 GQPGDYTVEDDQLGITEQPEV

Pogona IVSSEEMQGGGFGPPAYQAPGPDFATDARLRHMALN---
 QPGDYTVEDDQLGITEQPDV
 Anolis IVSSEEMQGGGFGAPAYRAPGPDFAMDFRFGNSPLN---
 QPGDYTVEDDTLGITEQPDV
 Gekko
 IVSSEEMQGGGLGAPAYRAMSPDLFSGAGFGSPPQNLGQPGDYTVEDDQLGITEQPEV
 MournGecko
 IVSSEEMQGGGLGAPAYRAMSPDLFSGAGFGSPPQNLGQPGDYTVEDDQLGITEQPEV
 Eublepharis
 IVSSEEMQGGGLGAPAYRAMSPDFFGMSAGFGNPPNRLGQPGDYTVEDDQLGITEQPDV
 Aspidoscelis IVSSEEMQGGGFGAPAYQAMSPDVFAMNAGFGNMKPRI-
 QPGDYTVEDDQLGITEQPDV
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 Allig_sinensis QGGANQGPSRGSQFPAVNPAGHGSA-ILLPEGIPAGQE-GFLPNI-
 NDMPGQGVNPVGQ-
 Allig_mississip QGGANQGPSRGSQFLAVNPAGHGSA-ILLPEGIPAGQE-GFLPNI-
 NDMPGQGVNPVGQ-
 Crocodilus_poro QGGANQGPSRGSRFPALNPAGHGSA-ILFPEGTPAGQE-GFLPNI-
 NDMPGQEVNPVGQ-
 Gharial QGGANQGPSRGSRFPALNPAGHGSA-IFLPEGTPAGQE-GFLPNI-
 NNMPGQEVNPVGQ-
 Caiman QGGANQGFSTRGSRFPAVNRAGHGSA-ILLPDGTPAGHE-GFLPNI-
 NDMPGQGVNPVGQ-
 Cobra PKGVKLGPF-----NPPNRGNN-VIPVDIN---PR-DALPNA-
 NS---NLLNPAGQS
 Thamnophis PKGANPGF-----NPLDRGNN-VIPVDIN---PR-
 VALPNANNN---NVLNPAGQS
 Crotalus_horrid QKGSNLGPF-----NPSDRGNT-LIPVDSN---PR-VALPNA-
 HN---NLLNPAGQS
 Crotalus_mitche QKGSNLGPF-----NPSDRGNT-LIPVDSN---PR-VALPNA-
 HN---NLLNPAGQS
 Protobothrops QKGSNRGPF-----NPSDRGNN-LIPVDSN---PR-VALPNA-
 HN---NLLNPAGQS
 Vipera QKGSNLGPF-----NPSDRGNN-VIPVDSN---PR-VALPNA-
 HN---NLLNPAGQS
 Pantherophis PKGANLGP-----NPPDRGND-VIPVDIN---PR-VALPNA-
 NN---NLLNPAGQS
 Boa QGGANLGS-----NPSSRGNN-VIPVDGN---PG-VALPNA-
 NN---NLLNPAGQS
 Python_mulurus QGGANLGS-----NPSGRGNN-VIPVDGN---LG-VALPNV-
 NN---NLLNPAAQS
 Ophisaurus QGGANLGA-----NPSAKRNN-GIPLDGN---QG-GAVPNA-
 NS---NLLNPAGQS
 Shinisaurus QGGANLGA-----NPSGKGNN-VIPLDGS---QG-GAVPNG-
 NS---NLFNPAGQS

Pogona KGGANVGA-----NPAGKGNP-ISPLEGN---PAIGASPNA-
 NS---YLLHPAGQS
 Anolis KGGANAGA-----NPSGKGNN-AVLLDGT---QG-GALPNA-
 NS---HLFSPAGQS
 Gekko QGGAKQAA-----NPSGNGNNVVVSVNGNN--PG-GALS---
 NS---NLMNPAGQS
 MournGecko QGGAKQAA-----NPSGNGNNVVVSVNGNN--PG-GALS---
 NS---NLMNPAGQS
 Eublepharis QGGANPAA-----NPSGNGNS-VVSLNNN---LG-GALSNA-
 NS---NLMNPAGQS
 Aspidoscelis QGGVNMGP-----NPPQTGNN-MNPIDGQ---QG-GTLLNA-
 NS---NLQNSLAQS

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Allig_sinensis RGTGLGVTPTATAPELTQGIPDSFMTFGAEGT-
 VPLGIQKEVTVEPTMFPEAQHTLMAGNG
 Allig_mississip RGTGLGVTPTATAPELTQGIPDSFMTFGAEGT-
 VPLGIQKEVTVDPTMFPEAQHTLMAGNG
 Crocodilus_poro RGTGLGVTPTAAAPELTQGIPDSFMPFGAEGT-
 VPLGIQKEVTVDPTMFPEAQHTLMAGNG
 Gharial RGTGLGVTPTAAAPELTQGIPDSFMPFGAEGT-
 VPLGIQKEVTVDPTMFPEAQHTLMAGNG
 Caiman RGTPEVTPTATAPELTQGIPDSFMTFGAEGT-
 VPLGIQKEVTADPTMFPEAQHTLMAGNG
 Cobra KGQPNAPQATALPPAI---PDSFIPLEASSTPMPL-----
 DPTMFPDSFYSTSAGNE
 Thamnophis KGQPNAPQATALPPVT---PDSFIPLEATSTPMPL-----
 DPTMFPDSFYSTSAGNE
 Crotalus_horrid KGQPNAPQATVLPPAI---PDSFIPLEATSTPMPL-----
 DPTMFPDFFYSTSAGNE
 Crotalus_mitche KGQPNAPQATVLPPAI---PDSFIPLEATSTPMPL-----
 DPTMFPDFFYSTSAGNE
 Protobothrops KGQPNAPQATALPPAI---PDSFIPLEATSTPMPL-----
 DPTMFPDFFYSTSAGNE
 Vipera KGQPNAPQATTLPPAI---PDSFIPLEATSSPMPL-----
 DPTMFPDFFYSTSAGNE
 Pantherophis KGQPNAPQATALPPAT---PDSFIPLEATSIPMPL-----
 DPTIFPDFFYSTSAGNE
 Boa KGQPGAPQATALPPAT---HDSFIPLEAADTAMPL-----
 DPTMFPDSFFSTSAGNE
 Python_mulurus KGQPSAPQATALPPAT---HDSFIPLEAADTAMPL-----
 DPTMFPDSFYST-GGNE
 Ophisaurus KGQTGAAQATI IPLATQGFPSFLPLDAADPTMPL-----
 DPTMFPDAIYTTNAVNE
 Shinisaurus K-----AQATVNPLVTQGLPDSFIPLDAADTAMPL-----
 DPTMFPDAIYTTNVGNE

```

Pogona          KGPLGEPQATGGPLAPEGLP----VVDAAGTAMPL-----
DPTTFPDTMFPTDVGNG
Anolis          QGLSGLAQATAAPHATQG---PFLPLDAADPSMPL-----
DATMFPD-LYTSNMGNE
Gekko           KGPGGMPQATVNPLATQGLPDSFIPFEA-DTPMPL-----
DPTMYPDAIYTAQAGNE
MournGecko      KGPGGMPQATVNPLATQGLPDSFIPFEA-DTPMPL-----
DPTMYPDAIYTAQAGNE
Eublepharis     QGPAGGLQATVNPLVTQGLPDSFVPPFEA-DTLMPL-----
DPTMSPDAIYTPQTGYE
Aspidoscelis    KGLLGAAQVTANPLATQGLPDTFLPFGADTT-----
DPTMLPDAMATTNV---
                :          .: *          . *          :.*
*:      .

```

```

Allig_sinensis  AEQPQVMQDVWHFQEP
Allig_mississip AEQPQVMQDVWHFQEP
Crocodylus_poro AEQPQVMQDAWHFQEP
Gharial         AEQPQVMQDAWHFQEP
Caiman          AEQPQVMQDVWHFQEP
Cobra           AGQPQVIQSSWHLQEP
Thamnophis      AGQPQVSQSSWHLQEP
Crotalus_horrid PGQPQVSQSSWHLQEP
Crotalus_mitche PGQPQVSQSSWYLQEP
Protobothrops   PGQPQVSQSNWHLQEP
Vipera          PGQPQVSQSSWHLQEP
Pantherophis    AGQPQVSQSSWYLQEP
Boa             VGQPQVSQNSWHFQEP
Python_mulurus  AGQPQLSQNSWHFQEP
Ophisaurus      AGQPQVGQDIWHFQEP
Shinisaurus     AGQPQVGQDVWHFQEP
Pogona          AGLSPIGQDMWHFQEP
Anolis          AGLAQVGQDAWHFQEP
Gekko           VGRPQIGQDGWHFQEP
MournGecko      VGRPQIGQDGWHFQEP
Eublepharis     AGQP---QDGWHFQEP
Aspidoscelis    AGYPQVGQDMWHFQEP
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Reptile-AMBNseqsAAs-Aln.txt

PAL2NAL output

CLUSTAL W multiple sequence alignment

Allig_sinensis -----ATGAATGTCTGGATGCTG---
 ATGTTATGCCTCCTAGGCACAGGGTTTGCT
 Allig_mississip -----ATGAATGTCTGGATGCTG---
 ACGTTATGCCTCCTAGGCACAGGGTTTGCT
 Crocodilus_poro -----ATGAATGTCTGGATGCTG---
 ACGTTATGCCTCCTAGGCACAGGGTTTGCT
 Gharial -----ATGAATGTCTGGATGCTG---
 ACGTTATGCCTCCTAGGCACAGGGTTTGCT
 Caiman -----ATGAATGTCTGGATGCTG---
 ACGTTATGCCTCCTAGGCACAGGGTTTGCT
 Cobra -----ATGAAACAATGGACATTT---
 GTCTTATGCCTTTTAGGAACATGTTCTGCT
 Thamnophis -----ATGAAACAATGGACATTT---
 GTCTTATGCCTTTTAGGAACATGTTCTGCT
 Crotalus_horrid -----ATGAAACAATGGATATTT---
 GCGTTATGCCTTTTAGGAACATGTTCTGCT
 Crotalus_mitche -----ATGAAACAATGGATATTT---
 GCGTTATGTCTTTTAGGAATATGTTCTGCT
 Protobothrops -----ATGAAACAATGGATATTT---
 GCATTATGCCTTTTAGGAACATGTTCTGCT
 Vipera -----ATGAAACAATGGATATAT---
 GTGTTATGCCTTTTAGGAACATGTACTGCT
 Pantherophis -----ATGAAACAATGGACATTT---
 GTCTTATGCCTTTTAGGAACATGTTCTGCT
 Boa -----ATGAAACAATGGATATTT---
 GTCTTATGCCTTTTAGGAACATGTTCTGCT
 Python_mulurus -----ATGAAACAATGGATATTT---
 GTCTTATGCCTTTTAGGATCATGTTCTGCT
 Ophisaurus -----ATGAAACAATGGATACTT---
 GTCTCATGCCTCTTAGGAATATGTTCTGCT
 Shinisaurus -----
 ATGAAACAATGGATACTTGTGTCTCATGCCTCTTAGGAATATGTTCTACT
 Pogona -----ATGAAACAATGGATACTT---
 GTCTCGAGCCTATTAGGAATATGTTCTGCT
 Anolis -----ATGAAACAATGGATGCTT---
 GTCTCCAGCCTCTTAGGAATATGTTCTGCT
 Gekko -----ATGAAACGATGGATACTT---
 GTCTCCTGTCTGTTAGAAATATGCTCTGCT
 MournGecko -----ATGAAACGATGGATACTT---
 GTCTCCTGTCTGTTAGAAATATGCTCTGCT
 Eublepharis -----ATGAAACGATGGATACTT---
 GTCTCGTGCTTATTAGGAATATGCTCTGCT
 Aspidoscelis ATGAAAGATCTGAAGCAATGGATTCTT---
 TTTTCATGGCTATTAGGAATCTGCTCTGCT

Allig_sinensis
 TTGCCAATGTACCCTCAGCATACTGGGACACGTGGAATGGCTAGTATGAGCCTTGAG---

Allig_mississip
TTGCCAATGTACCCTCAGCATACTGGGACACGTGGAATGGCTAGTATGAGCCTTGAG---
Crocodilus_poro
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Gharial
TTGCCAATGTACCCTCAGAATACTGGGACACGTGGAATGGCTAGTATGAGCCTTGAGAAG
Caiman
TTGCCAATGTACCCTCAGCATACTGGGACACGTGGAATGGCTAGTATGAGCCTTGAG---
Cobra
TTGCCGATACTGCCTCGTCATGCTGGGATTCTGGAATGGGTAGTATAAGCCTTGAGGGT
Thamnophis
TTGCCGGTACTGCCTCGTCATGCTGGGATTCTGGAATGGGTAGTATAAGCCTTGAGGGA
Crotalus_horrid
TTACCGATACTGCCCCATCATGCTGGGATTCTGGAATGGGTAGTATAAGCCTTGAGGGT
Crotalus_mitche
TTACCGATACTGCCCCATCATGCTGGGATTCTGGAATGGGTAGTATAAGCCTTGAGGGT
Protobothrops
TTACCGATACTGCCCCATCATGCTGGGATTCTGGAATGGGTAGTATAAGCCTTGAGGGT
Vipera
TTACCGATACTGCCCCATCATGCTGGGATTCTGGAATGGGTAGTATAAGCCTTGAGGGT
Pantherophis
TTGCCGATACTGCCTCGTCATGCTGGGATTCTGGAATGGGTAGTATAAGTCTTGAGTTT
Boa
TTGCCGATACTGCCTCGTCATGCTGGGATTCTGGAATGGGTAGTATAAGCCTTGAGGGT
Python_mulurus
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Ophisaurus
CTGCCGATTCTACCTCAACATGCTGGGATTCTGGACTTGGTAGTATAAGCCTGGAGAGA
Shinisaurus
CTGCCGATTCTCCTCAGCATGCTGGGATTCTGGAATTGGTAGTATAAGCCTAGAGGGG
Pogona
CTGCCGATACTTCTTCAACATGCTGGGATACCTGGATTAGGTAGCATAAGCCTTGAGACA
Anolis
CTGCCGCTATTCCCTCAGCATGCCGGGATACCTGGAATGGGTAGTATTAGTCTTGAGAGG
Gekko
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MournGecko
ATGCCGATACTTCTTTCAGCACAGTGGGATACCTGGAATAGGTAGTATAAGCCTTGAGNNN
Eublepharis
ATGCCGATGCTTCTTCAACACCCTGGGATACCTGGAATGGGTAGTATAAGCCTTAAGNNN
Aspidoscelis
CTGCCGNN

Allig_sinensis ATGAGGCAATATGGTTCGACAAAACATG---
AACATGCTTCCACAG---TATGGTTCGG---
Allig_mississip ATGAGGCAATATGGTTCGACAAAACATG---
AACATGCTTCCACAG---TATGGTTCGG---

Crocodilus_poro ATGAGACAATATGGTCGACAAAACATG---
AACATGCTTCCACAG---TATGGTCGA---
Gharial ATGAGACAATATGGTCGACAAAACATG---
AACATGCTTCCACAG---TATGGTCGA---
Caiman ATGAGACAATATGGTCGACAAAACATG---
AACATGCTTCCACAG---TATGGTCG---
Cobra
ATGAGACAGCTGGGTGGACCAAGTATACCAAAGGTACTCCCTCAG---TATGGCCAGACA
Thamnophis
ATGAGACAGTTGGGTGGACCAATGTACCCAAGGTACTCCCTCAG---TATGGCCAGACT
Crotalus_horrid
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Crotalus_mitche
ATGAGACAGCTGGGTGGACCAAGTATATCAAAGGTACTCCCTCAG---TATGGCCAGACT
Protobothrops
ATGAGACAGCTGGGTGGACCAAGTATATCAAAGGTACTCCCTCAG---TATGGCCAGACT
Vipera
ATGAGACAGTTGGGTGGACCAAGTATATCAAAGGTACTCCCTCAG---TATGGCCAGACT
Pantherophis
ACAAGACACATCGGTGGTTTATGGGTACCTCAGGCTAACCCAAGACTGTATGGCCAGACT
Boa
ATGAGACAAC TTGGTGGACCAAGTATACCAAATATATTCCTCCAG---TATGCCCAGACT
Python_mulurus
ATGAGAAAGTTGGGTGGACCAGGTATTCCACAAGAAGATGTAACA---TATGCCCAACCT
Ophisaurus TTGAGGCAATTTGGTAGACCTAATATGCCAAATGTA-----
CAG---TATGCTCAGCCT
Shinisaurus
ATGAGGCAATTTGGTAGACCTAATATGCCAAATGTACTTCCACAG---TATGCTCAGCCT
Pogona
ATGAGACAAATGGGTGGACGCAACGGACCTAATGCTCTCTCACAG---TATGCCATGCCT
Anolis
ACAAGACAAC TTGGTGGTTTAAACATACTCCTGCTGTCCCACAG-----GCTTTGCCT
Gekko
NN---TATGCTCGGCAC
MournGecko
NN---TATGCTCGGCAC
Eublepharis
NN---TATGCTCGGCAC
Aspidoscelis
NN-----CTT

Allig_sinensis
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Allig_mississip
TACGACTATGGTGAACCATTTAATTCAGTCTGGCTGCATGGTCTTCTCCACCACACTCT
Crocodilus_poro
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Gharial
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 Caiman
 TACGACTATGGTGAACCATTTAATTCAGTCTGGCTGCATGGTCTTCTCCCACCACACTCT
 Cobra
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 Thamnophis
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 Crotalus_horrid
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 Crotalus_mitche
 TACAGCTACGCTGATCCATATCATTCAATGTGGATGCACAATTCCTACCATCACATTCA
 Protobothrops
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 Vipera
 TACAGCTACGCCGATCCATATCATTCAATGTGGATGCACAATTCCTACCATCGCATTCA
 Pantherophis
 TACAGCTATGCTGATCCATTTAATTC AATGTGGATGCACAATTCCTACCGTCACATTCA
 Boa
 TATAGCTATGCTGATCCATTTCAATTC AATGTGGATGCACAATTCCTACCATCCCATTCA
 Python_mulurus
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 Ophisaurus
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 Shinisaurus
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 Pogona
 TACAGCTATGGTGATTTATTTTTTCCACCATGGATGCACAATCACCTGCCACCACATTCT
 Anolis
 TATAGCTATGCTGATCCATTCCATTCCATGTGGGGCAGAAGTTTTCTCCCATCACATACA
 Gekko TATACCTATGCTGATCCATTCCAT---
 ATGTGGATGCACAATTCCTTCCATCGCATTCA
 MournGecko TATACCTATGCTGATCCATTCCAT---
 ATGTGGATGCACAATTCCTTCCATCGCATTCA
 Eublepharis TATAGTTACTCTGATCCGTTCCAT---
 GTGTGGATACACAATTCCTTCCACCGCATTCA
 Aspidoscelis
 TACACTTACGCAGATCCGTTTGCTCCACTGTGGATTTCGCAATTCCTTCGACCACAGCCG

 Allig_sinensis TCA---
 TTTCCATGGTTACAGCAAAGACCACAAGAACGTGAGACCCAACAGTATGAATAT
 Allig_mississip TCA---
 TTTCCATGGTTACAGCAAAGACCACAAGAACGTGAGACCCAACAGTATGAATAT
 Crocodilus_poro TCA---
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 Gharial TCA---
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Caiman TCA---
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Cobra TCA---TTTACTTGATACGGCAAAGACCTCAA---
CATGAAACCCAACAGTATGAATAT
Thamnophis TCA---TTTACTTGATACGACAAAGACCTCAA---
CATGAAACCCAACAATATGAATAC
Crotalus_horrid GCG---TTCTACTTGATAAGGCAAAGACCTCAA---
GATGAAACTCAACAGTATGAATAC
Crotalus_mitche GCG---TTCTACTTGATAAGGCAAAGACCTCAA---
CATGAAACTCAACAGTATGAATAC
Protobothrops TCG---TTCTACTTGATAAGGCAAAGACCTCAA---
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Vipera TCG---TTCTACTTGATAAGGCAAAGACCTCAA---
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Pantherophis TCA---TTTACTTGATACGGCAAAGACCTCAA---
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Boa TCA---TTCTACTTGATAAGGCAAAGACCTCAA---
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Python_mulurus TCA---TTCTACTTGATAAGGCAAAGACCTCAA---
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Ophisaurus TCA---
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Shinisaurus TCG---
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Pogona TCA---
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Anolis TTT---
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Gekko
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MournGecko
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Eublepharis
TCGCCACCTTATTGGGGGAAGCGAAGAATTCATGATCACGATACTCAACAGTATGAATAT
Aspidoscelis TCC-----TATTGGATAAAG---ATCCCTCAA-----
CAGCAGTATGAATAC

Allig_sinensis
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Allig_mississip
GCAATGCCTGTACATCCACCACCTCTGCCATCGCAGCAGACCCCACTTCAGCCACAGCAA
Crocodilus_poro
GCAATGCCTGTACATCCACCACCTCTGCCATCACAGCAGACCCCACTTCAGCCACAGCAA
Gharial
GCAATGCCTGTACATCCACCACCTCTGCCATCACAGCAGACCCCACTTCAGCCACAGCAA
Caiman
GCAATGCCTGTACATCCACCACCTCTGCCATCGCTGCAGACCCCACTTCAGCCACAGCAA

Cobra ACAATGCCAGTGCACCCTCCTCCATTGCCTTCT---
CAAACACCCACTCTGCTCCAACAA
Thamnophis ACAATGCCAGTGCACCCTCCTCCGTTGCCATCT---
CAAACACCCACTCTGCTCCAACAA
Crotalus_horrid ACAATGCCAGTGCACCCTCCTCCATTGCCATCT---
CAAACACCCACTCTGCTACAACAA
Crotalus_mitche ACAATGCCAGTGCACCCTCCTCCATTGCCATCT---
CAAACACCCACTCTGCTACAACAA
Protobothrops ACAATGCCAGTGCACCCTCCTCCATTGCCATCT---
CAAACAACCACTCTGCTACAACAA
Vipera TCAATGCCAGTGCACCCTCCTCCATTGCCATCT---
CAAACACCTACTCTGCTACAACAA
Pantherophis ACAATGCCAGTGCACCCTCCTCCGTTGCCATCT---
CAAACACCCACTCTGCACCAACAA
Boa TCAATGCCGGTGCACCCTCCTCCATTGCCATCT---
CAAACACCCACTCTGCTTCAACAA
Python_mulurus TCAATGCCGGTGCACCCTCCTCCATTGCCATCT---
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Ophisaurus
TCTATGCCAGTGCACCCTCCTCCTGCCATCCCAGCAGACGCCACTCTGCTTCAACAG
Shinisaurus
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Pogona
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Anolis
GCCATGCCAGTTCACCCACCTCCTGCCGCTCTGCAAACGCCATTTCAGTTTGCAGAG
Gekko
TCGATGCCGGTGCACCCGCTCCTCTGCCATCTCAGCAAACCTCCCTT-----CAGCCT
MournGecko
TCGATGCCGGTGCACCCGCTCCTCTGCCATCTCAGCAAACCTCCCTT-----CAGCCT
Eublepharis
ACAATGCCGGTACACCCTCCTCCTGCCATCTCAGCAAACCTCCATT-----CTGCAT
Aspidoscelis
AGCTTGCCGTACACCCTCCACCCCTGCCATCTCAGCAAACGCCACTATACCTCAGCCT

Allig_sinensis CCAAGATTACAGGCTCAGAATCCT---
TCCCTGCGCTCAACGCTGCC-----TCAAAG
Allig_mississip CCAAGATTACAGGCTCAGAATCCT---
TCCCTGCACTCAACACTGCC-----TCAAAG
Crocodilus_poro CCAAGATTACAGGCTCAGAATCCT---
TCCCTGCACTCAATGCTGCC-----TCAAAG
Gharial CCAAGATTACAGGCTCAGAATCCT---
TCCCTGCACTCAATGCTGCC-----TCAAAG
Caiman CCAAGATTACAGGCTCAGAATCCT---
TCCTTGCGCTCAACGCTGCC-----ACAAAG
Cobra
CCTGGGATACAAGACCAACCTCATTACCATTATGCCATTTTCCTTCT-----ACAAGG

Thamnophis
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Crotalus_horrid
CCTGGGATACAAGAGCAACCTCCTTATCATTACACACATTTTCCTTCCT-----ACAAGG
Crotalus_mitche
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Protobothrops
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Vipera
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Pantherophis
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Boa
CCTGGAATACCAGAACAACCTAATCACCATTACACACATTTTCATTCCT-----ACAAGG
Python_mulurus
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Ophisaurus
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Shinisaurus
CCTGGAATACAGGAGCAACCTCACTACTCATTACGCATCTAATTCCT-----ACAAGG
Pogona
CCTGGAATACCAGAGCAACCTCACTACCAATTCATGATCTCACTCCT-----ACCATG
Anolis
CCTAGACTACCAGAACAACCTTTCTTTCAAATCACAAATCTAATTCCT-----ACAAGG
Gekko
CCTGGAATACAAGAGCAATTTCCCTTCCTACTGGCAAATCAAATTCATATACTCCTAGG
MournGecko
CCTGGAATACAAGAGCAATTTCCCTTCCTACTGGCAAATCAAATTCATATACTCCTAGG
Eublepharis
CATGGAGTGCAAGAGCAATTTCCCTATCCTAGTGACAAATCAAATCCCATTCTCTACAAGG
Aspidoscelis
GCAGGAAGGCAAGATAATCCTCACTATCAACTCACGAATCGAATCCCA-----GCACGG

Allig_sinensis
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Allig_mississip
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Crocodilus_poro
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Gharial
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Caiman
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Cobra
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Thamnophis
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Crotalus_horrid
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Crotalus_mitche
CAAGTCCAAATACAACATTATGATGTCCAGCCAGCATTTCAGCCAAAACAGTTTTCTCCA
Protobothrops
CAAGTCCAAATACAACATTATGATGTCCAGCCAGCATTTCAGCCGAAACAGTTTTCTCCA
Vipera
CAAGTCCAAATACCACATTATGATGTCCAGCCAGCATTTCAGCCAAAACAGTTTTCTCCA
Pantherophis
CAAGTCCAACTACAACATTATGATGTCCAGCCGCCATTTCATCCAAATCAGTTTTCTCCA
Boa
CAACTCCAAACACAACATTATGATGTACAGCCAGTGTTTCAGCCAAAACAGTTTTCTCCA
Python_mulurus
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Ophisaurus
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Shinisaurus
CAAGTCCAACTCCATCGGTATGATATGCAGCCACCATTCCAGCAGAATCCGTTTGCGCTG
Pogona
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Anolis
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Gekko
CAAATTCAACCCCAACAGTATGATATGCAGCCACCATTCCAGCAAAAACCATTCTTACAA
MournGecko
CAAATTCAACCCCAACAGTATGATATGCAGCCACCATTCCAGCAAAAACCATTCTTACAA
Eublepharis
CAAGGACAACTCCAGCAGTATGATATACAGCCGCCATTCCAGCAGAACTCTTTGCACAG
Aspidoscelis
CAAATCCAGCTCCAGCAATATAACTTT-----CCATTCTGCAA

Allig_sinensis CAGCAAGGAGAACTGCCTGGGATT-----
CAACAACCTGGTACCAGCAGAGAAGCAGCTA
Allig_mississip CAGCAAGGAGAACTGCCTGGGATT---
CAACAACAACCTGGTACCAGCAGACAAGCAGCTA
Crocodilus_poro CAGCAAGGAGAACTGCCTGGGATT-----
CAACAACCTGATACCAGCAGACAAGCAGCTA
Gharial CAGCAAGGAGAACTGCCTGGGATT-----
CAACAACCTGATACCAGCAGACAAGCAGCTA
Caiman CAGCAAGGAGAACTGCCTGGGATT---
CAACAACAGCTGATACCAGCAGACAAGCAGCTA
Cobra TCAGAAGGAAATCAGCTGGGCGTT---CAGCAACAGCTATCA---
TTGGACAGACATGCT
Thamnophis TCAGAAGGAAACCAGCCAGATGTT---CAACAACAGCTATCA---
TTGGACAGACAGGCT
Crotalus_horrid TCAGAAGGAAATCAGCCAGATGTT---CAGCAACAGCTATCA---
TTGGATAGACAGACT

Crotalus_mitche TCAGAAGGAAATCAGCCAGATGTT---CAGCAACAGCTATCA---
 TTGGATAGACAGACT
 Protobothrops TCAGAAGGAAATCAGCCAGATGTT---CAGCAACAGCTATCA---
 TTGGATAGACAGACT
 Vipera TCAGAAGGAAATCAGCCAGATGTT---CAGCAACAGCTATCA---
 TTGGATAGACAGACC
 Pantherophis TCAGAAGGAAACCAGCCAGATGTT---CAACAACAGCTATCA---
 TTGGATAGA-----
 Boa TCAGAAGGAAATCCACCAGATATT---
 CAGCAACAGCTATCACCATCAGACAGACAAACT
 Python_mulurus TCAGAAGGAAATCAACCAGATGTT---
 CAGCAACAGCCATCACCATCGGACAGACAAACT
 Ophisaurus CCAGAAGGAAATCAGCCAGTTCTT---
 CAACAACAGCTGCCCCACCAGACAGACAAACC
 Shinisaurus CCAGAAGGAAATCAGCCAGTTCTT---
 CAGCAACAGCTGCCCCACCAGACAGACAAACA
 Pogona
 CCAGAAGGGAATCAGCCTGTCGTTCCACAGAAGAAGCGGCCACCCTTGGACCGACAAACT
 Anolis
 GTAGAAGCCCATCCACCTGTTGACCCACAACAGCAGCCGCTGCCAGCAGAGAGACAAACT
 Gekko CCGGAAGGACGTCACCCAGTTGTT---CAACAATTGCAG---
 CTGCCAGACAGGCAGATG
 MournGecko CCGGAAGGACGTCACCCAGTTGTT---CAACAATTGCAG---
 CTGCCAGACAGGCAGATG
 Eublepharis CAAGAAGGACATCACCCGGTTGTT---CAACAATTGCTG---
 CCATTAGACAGGCAAACA
 Aspidoscelis CTAGAAGGTAACCAACCAGGGCTG-----
 CCATCGGACAGACAAAAT

 Allig_sinensis ---CAGTTACCAGCGCTG---
 GAATATTCAGGGCATTGTTGGGTCAGATGATGTACCCACTT
 Allig_mississip ---CAGTTACCAGCGCTG---
 GAATATTCAGGGCATTGTTGGGTCAGATGATGTACCCAATT
 Crocodilus_poro ---CAGTTACCAGCACTG---
 GAATATTCAGGGCATTGTTGGGTCAGGTGATGTACCCAATT
 Gharial ---CAGTTACCAGCACTG---
 GAATATTCAGGGCATTGTTGGGTCAGATGATGTACCCAATT
 Caiman ---CAGTTACCAGCGCTG---
 GAATATTCAGGGCATTGTTGGGTCAGGTGATGTACCCAATT
 Cobra
 CAACAGTTACCAGCCATAACAAGACTATTCAGGGACATTGAGCCAA---ATCTACCCGGC
 Thamnophis
 CAACAGTTACCTGCCATAACAAGACTATTCAGGGACATTGGGCCAA---ATCTACCCTGGC
 Crotalus_horrid
 CAACAGTTACCTGTCATAACAAGACTATTCAGGGACATTGGGCCAG---ATCTACCCTGGC
 Crotalus_mitche
 CAACAGTTACCTGTCATAACAAGACTATTCAGGGACATTGGGCCAG---ATCTACCCTGGC

Protobothrops
 CAACAGTTACCTGCCATACAAGACTATTCAGGGACATTGGGCCAG---ATCTACCCTGGC
 Vipera
 CAACAGTTACCTGCCATACAAGACTATTTAGGGACATTGGGACAA---ATCTACCCTGGC
 Pantherophis ---
 CNNTTACCTGCCATACAAGACTATTCAGGGACATTGGGCCAA---ATCTACCCTGGC
 Boa
 CAGCAGTTACCTGCTGTACAAGAATATTCAGGGACATTGGGCCAGGCCATCTACCCTGGT
 Python_mulurus
 CAGCAGTTACCCGCCATACAAGAATATTCATTCAAGAACATTATG---ATCTACCCTGGT
 Ophisaurus
 CAACAGTTACCAGCTGTACAAGAATACTCAGGGACATTGGGTCAG---ATCTATCCTGGC
 Shinisaurus
 CAACAGTTACCAGCTGTACAAGAATACTCAGGGACATTAGGTCAGGCAATTTATCCGGGT
 Pogona
 CAACAG-----ATCTACCTAGGT
 Anolis
 CATCAG-----ATCTATCCAGCT
 Gekko CAACAGTTATCA---
 TTTCAAGAATACTTGAGGACATTGGGTCAGACAATCTACCCAGGT
 MournGecko CAACAGTTATCA---
 TTTCAAGAATACTTGAGGACATTGGGTCAGACAATCTACCCAGGT
 Eublepharis ---CAATTACCA---
 TTTCAAGAATACTCGGCAACATTGGGTCAGGCAATTTACCCAAGT
 Aspidoscelis
 GAACAGTTACCAGCTATTCAAGAATACTTGGGAACACTAGATCAG-----

 Allig_sinensis
 GTCCATCAGTTAGTCCACCAAGGTCCAATGCAACCACAACAGCAATCAGCATTGCATCCT
 Allig_mississip
 GTCCATCAGTTAGTCCACCAAGGTCCAATGCAACCACAACAGCAACCAGCATTGCATCCT
 Crocodilus_poro
 GTCCATCAGTTAGTCCACCAAGGTCCAATGCAACCACAACAGCAACCAGCATTGCATCCT
 Gharial
 GTCCATCAGTTAGTCCACCAAGGTCCAATGCAACCACAACAGCAACCAGCATTGCATCCT
 Caiman
 GTCCATCAGTTAGTCCACCAAGGTCCAATGCAACCACAACAGCAACCAGCATTGCATCCT
 Cobra TTA CTTGGA---
 ACCCAGCAA AATACAGGTCAACAACCACAACA AATCTATTTATCCC
 Thamnophis TTATTTGGA---
 ACCCAGCAA AACACAGCCCAACAACCACAGCAAAGATCTATCTATCCT
 Crotalus_horrid TTATTTGGA---
 ACCCAGCAA AACACAGCCCAACAACCACAGCAGCAGTCTATTTATCCC
 Crotalus_mitche TTATTTGGA---
 ACCCAGCAA AACACAGCCCAACAACCACAGCAGCGGTCTATTTATCCC
 Protobothrops TTATTTGGA---
 ACCCAGCAA AACACAGCCCAACAACCACAGCAGCGATCTATTTATCCC

Vipera TTATTTGGA---
ACCCAGCAAAACACAGCCCAACAACCACAGCAGAGACCTATATATATCCC
Pantherophis TTATTTGGA---
ACCCAGCAAAACACAGCCCAACAACCACAGCTACAATCTATTTATCCC
Boa TTATTTGGA---
ACTCAACAAAACCTCAGCCCGACAACCACAGCAACGATCTATTTATCCC
Python_mulurus TTATTTGGA---
ACCCAGCAAAACACAGCCCAACAACCACAGCAACGATATATTTATCCC
Ophisaurus TTACATGGA---
ACTCAACAAGACCCAGCGCAGCCACCACCACAACGATCTATGTATCCC
Shinisaurus TTACATGGA---
ACCCAACAAGACCCAGCACAACCATCACAGCAACAATCTATGTATCCC
Pogona TTGCATGGA---
AACCAGCAAGACCAAGCACAACCACCACCACAGCAATCTATTTATCCA
Anolis CTGCATGGA---
ACCCAACAAGACCCATCTCAACAACCTGCAGCAACAATCTATATATCCA
Gekko TTGCTCACA---
ACCCACAGGACCCAGTACAACAGCCACAGCAACAATCTATTTATCCC
MournGecko TTGCTCACA---
ACCCACAGGACCCAGTACAACAGCCACAGCAACAATCTATTTATCCC
Eublepharis TTGCTTGA---
ACTCCACAGGAGCCTGTACAGCAGCCACAGCAACGATCAATTTATCCC
Aspidoscelis ---AGAGGT---
CCCCAACAAGATCTGGTCCAACAACCACAGCAACAGCCTGTTTCATCCC

Allig_sinensis
GCCCTGTTTTACATGTCCTATGCAGCAAACCAAGGAGGTGCTCCTGCTAGGCTT---GGC
Allig_mississip
GCCCTGTTTTACATGTCCTATGCAGCAAACCAAGGAGGTGCTCCTGCTAGGCTT---GGC
Crocodilus_poro
GCCCTGTTTTACATGTCCTATGGAGCAAACCAAGGAGGTGCTCCTGCTAGGCTT---GGC
Gharial
GCCCTGTTTTACATGTCCTATGCAGCAAACCAAGGAGGTGCTCCTGCTAGGCTT---GGC
Caiman
GCCCTGTTTTACATGTCCTATGCAGCAAACCAAGGAGGTGCTCCCGCTAGGCTT---GGC
Cobra AATTTGCAATATATGTCTTACGTAGCAAATAAAGGA---
GCTCCTACCAGATTA---GGA
Thamnophis AATTTGCAATATATGTCTTATGTAGCAAACAAAGGA---
GTTCTACCAGATTA---GGA
Crotalus_horrid AATTTGCAATATATGTCTTATGTAGCAAATAAAGAA---
GCTCCTGCCAGATTA---GGA
Crotalus_mitche AATTTGCAATATATGTCTTATGTAGCAAATAAAGGA---
ACTCCTGCCAGATTA---GGA
Protobothrops AATTTGCAATATATGTCTTATGTAGCAAATAAAGGA---
GCTCCTGCCAGATTA---GGA
Vipera AATTTGCAATATATGTCTTATGTAGCAAATAAAGGA---
GCTCCTACCAGATTA---GGA

Pantherophis AATTTGCAATATATGTCTTACATAGCAAATAAAGGA---
GTTCTGCCAGATTA---GGA
Boa AATTTGCAATATATGTCTTATATAGCAAACCAAGGA---
GCTCCTACCAGATTA---GGA
Python_mulurus AGTTTGCAATATATGTCTTATGTAGCAAACCAAGGA---
GCTCCTACCGATTA---GGA
Ophisaurus
AGTTTGTATTACTTGCCTTATGTAGCAAACCAAGGAGGTGCTCCTGCCAGATTA---GGA
Shinisaurus
AGTTTGTATTACATGCCTTACATAGCAAACCAAGGAGCGCTCCTGCCAGATTA---GGA
Pogona
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Anolis
AGTTTGTATTACATGCCTTACGTAGCAAACCAAGGAGCTGCTCCTGCCAGACAA---GGA
Gekko
AGTATGTACTACCTGTCTTATGCAGCAAACCAAGGAGCTGCTCCTGCCACATTA---GGA
MournGecko
AGTATGTACTACCTGTCTTATGCAGCAAACCAAGGAGCTGCTCCTGCCACATTA---GGA
Eublepharis
AGTTTGTATTACATGCCTTACGTAGCAAACCAAGGAGCCGCTCCTGGCAGATTAGGAGGA
Aspidoscelis
AATTTGTACTACATGTCTTATGTAGCAAATCAAGGTGGTGCTCCTGCCAGATTA---GGA

Allig_sinensis
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Allig_mississip
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Crocodylus_poro
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Gharial
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Caiman
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Cobra
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Thamnophis
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Crotalus_horrid
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Crotalus_mitche
ATAGTAAGCTCAGAAGAAATGCAGGGTGGAGGATTTGGGGCACCCAGCCTATCGAGCAGCA
Protobothrops
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Vipera
ATAGTAAGCTCAGAAGAAATGCAGGGTGGAGGATTTGGGGCACCCAGCCTATCGAGCAGCA
Pantherophis
ATAGTAAGCTCAGAAGAAATGCAGGGTGGAGGATTTGGTGCACCAGCCTATCGGGCAGCA

Boa
GTAGTAAGCTCAGAAGAAATGCAGGGTGGTGGATTTGGTGCACCAGCCTATCGGGCAGCA
Python_mulurus
ATAGTAAGCTCTGAAGAAATGCAGGGTGGGGGATTTGGTGCACCAGCCTATCGAGCAGCA
Ophisaurus
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Shinisaurus
ATAGTAAGCTCAGAAGAAATGCAGGGTGGTGGCCTTGGTGCACCAGCCTATCGAGCAGCG
Pogona
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Anolis
ATAGTAAGCTCAGAAGAAATGCAGGGTGGTGGATTTGGTGCGCCAGCCTACCGGGCACCA
Gekko
ATAGTAAGCTCAGAAGAAATGCAGGGCGGTGGGCTTGGTGCACCAGCCTATCGTGCCATG
MournGecko
ATAGTAAGCTCAGAAGAAATGCAGGGCGGTGGGCTTGGTGCACCAGCCTATCGTGCCATG
Eublepharis
ATAGTGAGCTCAGAAGAAATGCAGGGTGGTGGCCTCGGTGCACCAGCCTATCGTGCCATG
Aspidoscelis
ATAGTCAGCTCAGAAGAAATGCAGGGTGGTGGATTTGGTGCCCCAGCCTATCAAGCAATG

Allig_sinensis ATTCCT-----
GGATTCAGAGGGATGCCTCAGGACCCA---GCC
Allig_mississip ATTCCT-----
GGATTCAGAGGGATGCCTCAGGACCCA---GCC
Crocodilus_poro ATTCCT-----
GGATTCAGAGGGATGCCTCAGGACCCA---GCC
Gharial ATTCCT-----
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Caiman ATTCCT-----
GGATTCAGAGGGATGCCTCAGGACCCA---GCC
Cobra
GGCCCCATGGCTTTCCCATGGATGCCAGATTTGGAAATATGCCACTGAACAAT---GGC
Thamnophis
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Crotalus_horrid
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Crotalus_mitche
GGCCCCATGTCTTTCCCATGGATGCCAGATTTGGAAATATGCCATTGAACAGA---GGC
Protobothrops
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Vipera
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Pantherophis
GGCTCCCATGGCTTTCCCATGGATGCCAGATTTGGAAATATGCCACTGAATAGA---GGC
Boa
GGCCCCATCTCTTTCCCATGGATGCTAGATTTGGGAATATACCACTGAATAGA---GGA

Python_mulurus

GGCCCCATCTCTTTCCCATGGATGCTAGATTTGGAAATATGCCACTGAATAGA---GGC

Ophisaurus

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Shinisaurus

AGCCCCGACCTCTTTGCCATGGATGCTAGGTTTGGAAACATGCCACTGAACAGA---GGC

Pogona

GGCCCTGATCTCTTTGCCACAGATGCTAGGTTACGACACATGGCGCTGAAC-----

Anolis

GGCCCTGATCTGTTTGCCATGGATACTAGATTTGGAAATTCGCCACTCAAC-----

Gekko

AGCCCAGATCTCTTTTCCATGGGTGCTGGATTTGGAAGCCCACCACAGAACAGACTAGGG

MournGekko

AGCCCAGATCTCTTTTCCATGGGTGCTGGATTTGGAAGCCCACCACAGAACAGACTAGGG

Eublepharis

AGCCCTGATTTCTTTGGTATGAGTGCTGGATTTGGAAACCCTCCACCGAACAGACTAGGC

Aspidoscelis

AGCCCTGATGTCTTTGCAATGAATGCAGGATTTGGAAACATGAAGCCACGCATA---GGC

Allig_sinensis

CTGCAGGGAGATTTTACAACGGAAGATGATAACCCTGCTACAGCACATAATCCAGCCATC

Allig_mississip

CTCCAGGGAGATTTTACAACGGAAGATGATAACCCTGCTACAGCACATAATCCAGCCATC

Crocodilus_poro

CTCCAGGGAGATTTTACAACGGAAGATGATAACCCTGCTACAGCACATAATCCAGCCTTC

Gharial

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Caiman

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Cobra

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Crotalus_horrid

CAACCAGGAGATTACACAGTCGAAGATGATCAACTGGGCATTACAGAACAGCCTGAAGTT

Crotalus_mitche

CAACCAGGAGATTACACAGTCGAAGATGATCAACTGGGCATTACAGAACAGCCTGAAGTT

Protobothrops

CAACCAGGAGATTACACAGTCGAAGATGATCAACTGGGCATTACAGAACAGCCTGAAGTT

Vipera

CAGCCAGGAGATTACACAGTCGAAGATGATCAACTGGGCATTACAGAGCAGCCTGAAGTT

Pantherophis

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Boa

CAACCAGGAGATTACACAGTTGAAGATGATCAGCTGGGCATTACAGAACAGCCTGAAGTT

Python_mulurus

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Ophisaurus
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Shinisaurus
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Pogona
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Anolis
CAGCCTGGAGATTACACTGTTGAAGATGATACGCTGGGAATAACAGAACAGCCTGATGTA
Gekko
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MournGecko
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Eublepharis
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Aspidoscelis
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Allig_sinensis
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Allig_mississip
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Crocodilus_poro
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Gharial
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Caiman
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Cobra
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Thamnophis
CCAAAAGGAGCCAACCCAGGACCC-----AATCCTCTG
Crotalus_horrid
CAAAAAGGATCTAATCTAGGGCCC-----AACCCTTCA
Crotalus_mitche
CAAAAAGGATCTAATCTAGGGCCC-----AACCCTTCA
Protobothrops
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Vipera
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Pantherophis
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Boa
CAAGGAGGAGCTAATCTAGGGTCC-----AACCCTTCA
Python_mulurus
CAAGGAGGAGCTAATCTAGGGTCC-----AACCCTTCA
Ophisaurus
CAAGGAGGCGCTAACCTAGGGGCT-----AACCCTATCT

Shinisaurus CAAGGAGGAGCTAACCTAGGGGCT-----AACCCTTCT
 Pogona AAAGGCGGAGCTAATGTTGGGGCC-----AATCCTGCA
 Anolis AAAGGAGGGGCTAATGCTGGGGCC-----AATCCTTCT
 Gekko CAAGGAGGAGCTAAACAGGCCGCT-----AACCCTTCA
 MournGecko CAAGGAGGAGCTAAACAGGCCGCT-----AACCCTTCA
 Eublepharis CAAGGAGGAGCTAACCCGGCCGCT-----AACCCTTCA
 Aspidoscelis CAGGGAGGAGTTAACATGGGGCCC-----AACCCTTCA

Allig_sinensis GGCATGGAAGTGCC---
 ATACTTCTTCCAGAGGGGATCCCAGCAGGACAGGAG---GGT
 Allig_mississip GGCCATGGAAGTGCC---
 ATACTTCTTCCAGAGGGGATCCCAGCAGGACAGGAG---GGT
 Crocodilus_poro GGCCATGGAAGTGCC---
 ATACTTTTTTCCAGAGGGGACCCAGCAGGACAGGAG---GGT
 Gharial GGCCATGGAAGTGCC---
 ATATTTCTTCCAGAGGGGACCCAGCAGGACAGGAG---GGT
 Caiman GGCCATGGAAGTGCC---
 ATACTTCTTCCAGATGGGACCCAGCAGGACACGAG---GGT
 Cobra AACAGAGGGAACAAT---
 GTTATCCCTGTAGATATCAAC-----CCAAGG---GAT
 Thamnophis GACAGAGGGAATAAT---
 GTTATCCCTGTAGATATCAAC-----CCAAGG---GTT
 Crotalus_horrid GACAGAGGGAACACT---
 CTTATCCCTGTAGATAGCAAC-----CCAAGG---GTT
 Crotalus_mitche GACAGAGGGAACACT---
 CTTATCCCTGTAGATAGCAAC-----CCAAGG---GTT
 Protobothrops GACAGAGGGAACAAT---
 CTTATCCCTGTAGATAGCAAC-----CCAAGG---GTT
 Vipera GACAGAGGGAACAAT---
 GTTATCCCTGTAGATAGCAAC-----CCAAGG---GTT
 Pantherophis GACAGAGGGAATGAT---
 GTTATCCCTGTAGATATCAAC-----CCAAGA---GTT
 Boa AGCAGAGGGAACAAT---
 GTAATCCCTGTAGATGGCAAC-----CCAGGG---GTT
 Python_mulurus GGGAGAGGGAACAAT---
 GTAATCCCTGTAGATGGCAAC-----CTAGGG---GTT
 Ophisaurus GCCAAGAGGAACAAT---
 GGCATCCCGTTAGATGGCAAC-----CAGGGT---GGT
 Shinisaurus GGCAAGGGAACAAT---
 GTCATCCCGTTAGATGGCAGC-----CAGGGT---GGC

Pogona GGCAAGGGGAACCCT---
 ATCAGCCCCCTAGAGGGCAAT-----CCAGCTATTGGT
 Anolis GGCAAGGGGAACAAT---
 GCCGTCTTTTAGATGGTACC-----CAAGGC---GGT
 Gekko
 GGCAATGGGAACAACGTCGTTGTCTCTGTAAATGGCAACAAC-----CCAGGA---GGT
 MournGecko
 GGCAATGGGAACAACGTCGTTGTCTCTGTAAATGGCAACAAC-----CCAGGA---GGT
 Eublepharis GGCAACGGGAACAGT---
 GTCGTCTCCCTGAACAACAAC-----CTGGGA---GGC
 Aspidoscelis CAGACGGGGAACAAT---
 ATGAACCCCATAGATGGCCAA-----CAAGGT---GGT

Allig_sinensis TTTTGGCCAAATATT---
 AACGATATGCCAGGCCAAGGGGTCAATCCTGTTGGTCAG---
 Allig_mississip TTTTGGCCAAATATT---
 AACGATATGCCAGGCCAAGGGGTCAATCCTGTTGGTCAG---
 Crocodilus_poro TTTTGGCCAAACATT---
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 Gharial TTTTGGCCAAACATT---
 AACAATATGCCAGGCCAAGAGGTCAATCCTGTTGGTCAG---
 Caiman TTTTGGCCAAATATT---
 AACGATATGCCAGGCCAAGGGGTCAATCCTGTTGGTCAG---
 Cobra GCCTTGCCCAATGCC---AATAGC-----
 AATCTGTTAAACCCTGCTGGTCAAAGT
 Thamnophis GCCTTGCCCAATGCCAACAACAAC-----
 AACGTGTTAAACCCTGCTGGTCAGAGT
 Crotalus_horrid GCCTTGCCCAATGCC---CATAAC-----
 AATCTATTAAACCCGGCTGGTCAGAGT
 Crotalus_mitche GCCTTGCCCAATGCC---CATAAC-----
 AATCTATTAAACCCGGCTGGTCAGAGT
 Protobothrops GCCTTGCCCAATGCC---CATAAC-----
 AATCTATTAAACCCGGCTGGTCAGAGT
 Vipera GCCTTGCCCAATGCC---CATAAC-----
 AATCTATTAAACCCCGCTGGTCAGAGT
 Pantherophis GCCTTGCCCAATGCC---ACAAC-----
 AATCTGTTAAACCCTGCTGGTCAGAGT
 Boa GCCTTGCCCAATGCC---ACAAC-----
 AATCTGTTAAACCCTGCTGGTCAGAGT
 Python_mulurus GCCTTGCCCAATGTC---AATAAC-----
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 Ophisaurus GCTGTGCCAAACGCC---AATAGC-----
 AATCTGCTCAACCCTGCAGGCCAGAGC
 Shinisaurus GCTGTGCCAAACGGC---AACAGC-----
 AACCTGTTCAACCCTGCAGGCCAGAGC
 Pogona GCCTCACCAATGCC---AACAGC-----
 TATCTCCTGCATCCGGCTGGCCAGAGC

Anolis GCTTTGCCAAATGCC---AACAGC-----
CACCTGTTTCAGCCCTGCTGGCCAGAGC
Gekko GCTCTGTCC-----AACAGC-----
AACCTGATGAACCCCGCTGGGCAGAGT
MournGecko GCTCTGTCC-----AACAGC-----
AACCTGATGAACCCCGCTGGGCAGAGT
Eublepharis GCTTTGTCTAATGCC---AACAGC-----
AACCTGATGAACCCTGCTGGGCAGAGT
Aspidoscelis ACCTTGCTAAATGCC---AATAGT-----
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Allig_sinensis
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Allig_mississip
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Crocodilus_poro
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Caiman
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Cobra
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Thamnophis
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Crotalus_horrid
AAAGGGCAACCAAATGCACCTCAAGCCACTGTCTTGCTCCAGCAATT-----CCT
Crotalus_mitche
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Protobothrops
AAAGGGCAACCAAATGCACCTCAAGCCACTGCCTTGCTCCAGCAATT-----CCT
Vipera
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Pantherophis
AAAGGGCAGCCAAATGCACCTCAAGCCACTGCCTTGCTCCAGCAACT-----CCT
Boa
AAAGGGCAGCCAGGTGCACCCCAAGCCACTGCCTTGCTCCAGCAACT-----CAT
Python_mulurus
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Ophisaurus
AAAGGACAAACAGGCGCCGCCAAGCGACCATAATCCCTCTGGCCACACAAGGGTTCCCT
Shinisaurus AAA-----
GCCCAAGCGACAGTAAACCCTCTCGTGACTCAAGGGCTCCCC
Pogona
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Anolis
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Gekko
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MournGecko
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Eublepharis
CAAGGACCTGCGGGTGGCCTCCAAGCTACTGTAAACCCACTCGTGACTCAAGGCCTCCCC
Aspidoscelis
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Allig_sinensis GACAGCTTTATGACCTTTGGTGCTGAGGGCACA---
GTACCTCTGGGTATAACAGAAAGAA
Allig_mississip GACAGCTTTATGACCTTTGGTGCTGAGGGCACA---
GTACCTCTGGGTATAACAGAAAGAA
Crocodilus_poro GACAGCTTTATGCCCTTTGGTGCTGAGGGCACA---
GTACCTCTGGGTATAACAGAAAGAA
Gharial GACAGCTTTATGCCCTTTGGTGCTGAGGGCACA---
GTACCTCTGGGTATAACAGAAAGAA
Caiman GACAGCTTTATGACCTTTGGTGCTGAGGGCACA---
GTACCCCTGGGTATAACAGAAGGAA
Cobra
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Thamnophis
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Crotalus_horrid
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Crotalus_mitche
GATAGCTTCACTCCATTTAGAGGCAACTAGCACTCCCATGCCTTTG-----
Protobothrops
GATAGCTTCACTCCATTTAGAGGCAACTAGCACTCCCATGCCTTTG-----
Vipera
GATAGCTTCACTCCATTTAGAGGCAACTAGCAGTCCCATGCCTTTG-----
Pantherophis
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Boa
GATAGCTTCATTCCTTTGGAGGCTGCTGACACTGCCATGCCTTTG-----
Python_mulurus
GATAGCTTCATTCCTTTGGAGGCTGCTGACACTGCCATGCCTTTG-----
Ophisaurus
GACAGCTTCCTCCCTCTGGATGCTGCAGACCCACCATGCCTTTG-----
Shinisaurus
GACAGCTTCATCCCTCTGGATGCTGCCGACACTGCCATGCCTTTA-----
Pogona

GTTGTGGATGCTGCTGGCACAGCCATGCCTTTG-----
Anolis

CCTTTCCTTCCTTTGGATGCTGCTGATCCTTCTATGCCTTTG-----
Gekko GACAGCTTCATCCCTTTTGGAGGCC---
GACACTCCTATGCCGCTG-----

MournGecko GACAGCTTCATCCCTTTTGAGGCC---
GACTCTCTATGCCGCTG-----
Eublepharis GACAGCTTCGTCCCTTTTGAGGCC---
GACTCTTATGCCGCTG-----
Aspidoscelis
GACACCTTCTCCCTTTTGGGGCTGACTACA-----

Allig_sinensis
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Allig_mississip
GTGACCGTGGACCCTACCATGTTCCCAGAAGCTCAGCATAACGCTCATGGCAGGAAATGGG
Crocodilus_poro
GTGACCGTGGACCCTACCATGTTCCCAGAATCTCAGCGTACGCTCATGGCAGGAAATGGG
Gharial
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Caiman
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Cobra -----
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Thamnophis -----
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Crotalus_horrid -----
GATCCTACCATGTTTCCTGACTTCTTTTACTCAACCAGTGCAGGAAATGAG
Crotalus_mitche -----
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Protobothrops -----
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Vipera -----
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Pantherophis -----
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Boa -----
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Python_mulurus -----
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Ophisaurus -----
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Shinisaurus -----
GATCCACCATGTTCCCCGATGCCATATACACAACCAATGTAGGAAATGAG
Pogona -----
GACCCTACCACGTTCCCTGACACGATGTTCCCAACTGATGTGGGAAATGGG
Anolis -----GATGCCACTATGTTCCCTGAC---
TTATACACAAGCAATGTGGGAAATGAG
Gekko -----
GATCCACCATGTACCCTGATGCCATATACACAGCCCAGGCAGGAAATGAG
MournGecko -----
GATCCACCATGTACCCTGATGCCATATACACAGCCCAGGCAGGAAATGAG

Eublepharis -----
GATCCCACCATGTCCCCGGATGCCATATACACACCCCAGACAGGATATGAG
Aspidoscelis -----
GACCCTACCATGCTCCCTGATGCAATGGCCACAACCTAACGTG-----

Allig_sinensis
GCTGAACAGCCACAGGTTATGCAAGATGTCTGGCATTTCCTCAAGAGCCC
Allig_mississip
GCTGAACAGCCACAGGTTATGCAAGATGTCTGGCATTTCCTCAAGAGCCC
Crocodilus_poro
GCTGAACAGCCACAGGTTATGCAAGATGCCTGGCATTTCCTCAAGAGCCC
Gharial
GCTGAACAGCCACAGGTTATGCAAGATGCCTGGCATTTCCTCAAGAGCCC
Caiman
GCTGAACAGCCACAGGTTATGCAAGATGTCTGGCATTTCCTCAAGAGCCC
Cobra
GCTGGTCAACCACAAGTCATTCAAAGCAGCTGGCATTTCCTCAAGAGCCT
Thamnophis
GCTGGCCAGCCACAAGTCAGTCAAAGCAGCTGGCATTTCCTCAAGAGCCC
Crotalus_horrid
CCTGGCCAGCCACAAGTCAGTCAAAGCAGCTGGCATTTCCTCAAGAGCCT
Crotalus_mitche
CCTGGCCAGCCACAAGTCAGTCAGAGCAGCTGGTATTTACAAGAACCT
Protobothrops
CCAGGCCAGCCACAAGTCAGTCAAAGCAACTGGCATCTGCAAGAGCCT
Vipera
CCTGGCCAGCCACAAGTCAGTCAAAGCAGCTGGCATTTCCTCAAGAGCCT
Pantherophis
GCTGGCCAGCCACAAGTCAGTCAAAGCAGCTGGTATTTGCAAGAGCCT
Boa
GTTGGCCAGCCACAAGTCAGTCAAACAGCTGGCATTTCCTCAAGAGCCC
Python_mulurus
GCTGGCCAGCCACAACCTCAGTCAAACAGCTGGCATTTCCTCAAGAGCCC
Ophisaurus
GCTGGCCAGCCACAGGTAGGTCAGGACATCTGGCATTTCCTCAAGAGCCC
Shinisaurus
GCTGGCCAGCCACAGGTCGGTCAGGATGTCTGGCATTTCCTCAAGAGCCC
Pogona
GCAGGCCTGTCCCCGATAGGCCAGGACATGTGGCATTTCCTCAAGAGCCC
Anolis
GCTGGTCTGGCCAGGTGGGTCAGGATGCATGGCATTTCCTCAAGAGCCC
Gekko
GTTGGGCGGCCACAGATAGGTCAGGACGGATGGCATTTCCTCAAGAACCC
MournGecko
GTTGGGCGGCCACAGATAGGTCAGGACGGATGGCATTTCCTCAAGAACCC
Eublepharis GCTGGCCAGCCA-----
CAAGATGGATGGCATTTCCTCAAGAACCC

Aspidoscelis
GCTGGCTACCCACAAGTAGGTCAGGATATGTGGCATTTCAGGAGCCC

Reptile-AMEL_AA-Aln.txt

CLUSTAL format alignment by MAFFT (v7.370)

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Allig_sinensis  MEGWMLITCLLGATFAIP--
VPPHPHHPGYVNFSEVLTPLKQYQSLMRQPYSSYGYEPM
Allig_mississip MEGWMLITCLLGATFAIP--
VPPHPHHPGYVNFSEVLTPLKQYQSLMRQPYSSYGYEPM
Crocodilus_poro MEGWMLITCLLGATFAIP--
VPPHPHHPGYVNFSEVLTPLKQYQSLMRQPYSSYGYEPM
Gharial         MEGWMLITCLLGATFAIP--
VPPHPHHPGYVNFSEVLTPLKQYQSLMRQPYSSYGYEPM
Paleosuchus     MEGWMLITCLLGATFAIP--
LPPHPHHPGYVNFSEVLTPLKQYQSLMRQPYSSYGYEPM
Anolis          MEGWTLVMCLLSTTFAIP--LP---
QHPGYINFSYEVMTPLKQYQSLIGHQYPRYGFPEPM
Ophisaurus      MESWTLVMCLLSTTFALP--LP---
QHPGYINFSYEVMTPLKQYQSLIGHQYPRYGYEPM
Shinisaurus     MMSWTLVMCLLSSTFALPPQLP---
QHPGYINFSYEVMTPLKQYQSLIGHQYPRYGYEPM
Boa_constrictor MESWTLVMCLLSTAFaip--LP---
QHPGYINLSYEVMTPLKQYQSIIGHQYPRYGYEPM
Thamnophis      MESWTLVMCLLSTAFaip--LP---
QHPGYINFSYEVMTPLKQYQSIIGHQYPRYGYEPM
Crotalus_horrid MESWTLVMCLLNSAFaip--LP---
QHPGYINFSYEVMTPLKQYQGIIGHQYPRYGYEPM
Crotalus_mitche MESWTLVMCLLNSAFaip--LP---
QHPGYINFSYEVMTPLKQYQGIIGHQYPRYGYEPM
Protobothrops   MESWTLVMCLLSSAFaip--LP---
QHPGYINFSYEVMTPLKQYQGIIGHQYPRYGYEPM
Vipera          MESWTLVMCLLSSAFaip--LP---
QHPGYINFSYEVMTPLKQYQGIIGHQYPRYGYEPM
Python_mulurus  MESWTLVMCLLSTAFaip--LP---
QHPGYINFSYEVVTPLKQYQSIIGHQYPRYGYEPM
Cobra           MESWTLVMCLLSTAFaip--LP---
QHPGYINFSYEVLTPLKQYQSIIGPQYPRYGYEPM
Pantherophis    MESWTLVMCLLSTTFAIP--LP---
QHPGYINFSYEVMTPLKWFQSIIGHQYPRYGYEPM
Ctenosaurs      MGGWTLVMCLLCTTLAIP--LP---
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QHPGFINFSYEVMTPLKWYQSLMGPQYPRYGYEPM
Pogona MEGWTLIMSLLCCTTLAIP--LP---
QHPGFINFSYEVMTPLKWYQGVMGHQYPRYGYEPM
Eublepharis MKGWTLFMCLFSAAFSLP--LP-
HAQHPGYINFSYEVMTPLKWYQSLIGHQYPRYSYEP
MournGekko MKSWTLLICLFSAVFSLP--LP-
HAQHPGYINFSYEVMTPLKWYQSLIGHQYPRYSYEP
Gekko_japon MKSWTLLICLFSAVFSLP--LP-
HAQHPGYINFSYEVMTPLKWYQSLIGHQYPRYSYEP
Aspidoscelis MEGWTLVMCFLSATFAVP--LP---
QHPGYINFSYEVLTPLKWYQSLVGPQLPHYGYGPM

* .*

. .:: :.:. :* :***:.*:*****:*****:*.:. . *.: **

Allig_sinensis GGWLHQPLPIAQ-----QHPPIQTLTPHHQIPFL-
SPQHPLMQMPGPHQMMP--
Allig_mississip GGWLHQPLPIAQ-----QHPPIQTLTPHHQIPFL-
SPQHPLMQMPGPHQMMP--
Crocodilus_poro GGWLHQPLPIAQ-----QHPPIQTLTPHHQIPFL-
SPQHPLMQMPGQOMMP--
Gharial GGWLHQPLPIAQ-----QHPPIQTLTPHHQIPFL-
SPQHPLMQMPGQOMMP--
Paleosuchus GGWLHQPLPIAQ-----QHPPIQTLTPHHQIPFL-
SPQHPLMQMPGPHQMMP--
Anolis GGWMHHAAGPTMH-QTTFQSHPSVHSTLHQMOPPH-----
PALNPHMQPPGHNPFVPM
Ophisaurus GGWMHSTGPMTH-QPYFQG-NPMH--LHPMQPQQ-----
PPHNPQMYPGHNSYGPMT
Shinisaurus GGWMHHTSGPVTH-QTHFQGLHPMHP-LHQIHPQQ-----
PPVNPMPQPGHNPFVPM
Boa_constrictor GGWMHHNAGPVMH-PTHFHGVHAMHPALHQMOPQQ-----
PPHNPHLQQPGHNPFVPIH
Thamnophis GGWMHHNAGPLMH-PTHFHGVHAIHPALHQMOPQQ-----
PPQNPHLQQPGLNPFVQLN
Crotalus_horrid GGWMHHNAGPMMH-PTHFHGVHAIHPALHQMOPPLQ-----
PPQNPHLQQPGLNPFVPLN
Crotalus_mitche GGWMHHNAGPMMH-PTHFHGVHAIHPALHQMOPPLQ-----
PPQNPHLQQPGLNPFVPLN
Protobothrops GGWMHHNAGPMMH-PTHFHGVHAIHPALHQMOPPLQ-----
PPQNPHLQQPGLNPFVPLN
Vipera GGWMHHNAGPMMH-PTHFHGIHAIHPALHQMOPPLQ-----
PPQNPHLQQPGLNPFVPLN
Python_mulurus GGWMHHNAGPLMH-PTHFHGVHAMHPSLHPMQPQQ-----
PPQNPHLQQPGHNPFIPIT
Cobra GGWMHNSGPVTH-PTHF---HAIHPALHQMOPPPQ-----
LPQNPHLQQPGPNPFVPLN
Pantherophis GGWMHHNAGPMMQ-PPHFHGVHAIHPALHQQOPHQ-----

LPQNPQLQQPGLNAFVPLN
 Ctenosaurs GGWMRHATGPMMH-QTHIQNLPPMHSP IHQMOPQH-----
 QILNPQMPQPGHNGFVPLP
 Pogona GGWMHHSPPGSMH-QAPFQTLHPMPPLHQVQ-QQ-----
 PPLNPHMQLPGHNTLVPMT
 Eublepharis GGWMHHHTGPAMPPHSSFPGFQQIHAPSHQMHPSSQO--
 HLQPPLNTPVQPAGHSPFGHMP
 MournGekko GGWMHHHTGPH---HSPYLGFFQIHPPLPHQMHPSSQO--HL-
 PPMNTPLQPVGHAPFGQMP
 Gekko_japon GGWMHHHTGPH---HSPYLGFFQIHPPLPHQMHPSSQO--HL-
 PPMNTPLQPVGHAPFGQMP
 Aspidoscelis AGWIQHSGGPAMP-HAQFQ----MHNPLHQVQPHL-----
 QSFPSHPAYHPIGPMP
 .**::: . : ..
 .

Allig_sinensis -----
 IPQQQPSLQMPVQEPVQPOAGEHPSPPLOPQQPGHPNPPMQPQLPGSPHPPMQPQ
 Allig_mississip -----
 IPQQQPSLQMPVQEPVQPOAGEHPSPPLOPQQPGHPNPPMQPQLPGSPHPPMQPQ
 Crocodilus_poro -----
 IPQQQPSLQMPVQEPVQPOAGEHPSPPVQPOQQPGHPNPPMQPQLPGSPHPPMQPQ
 Gharial -----
 IPQQQPSLQMPVQEPVQPOAGEHPSPPVQPOQQPGHPNPPMQPQLPGSPHPPMQPQ
 Paleosuchus -----
 IPQQQPSLQMPVQEPVQPOAGEHPSPPVQPOQQPGHPNPPMQPQLPGSPHPPMRPQ
 Anolis GQNTLMPQFQPAHGGPIHHPFQPHAGEH-----
 PMHPQQTGNPVHPMHPQ
 Ophisaurus GQDTLMPHYPPPQVGPVQHPPPPHAGEY-----
 PMHPQQPGNRNHPMHPQ
 Shinisaurus GQNPLMPQYQPTHTGTVQHPLVPHAGEH-----
 PMHPQQPGNPNQPMHPQ
 Boa_constrictor GHNTLIPHYQ----PVQHPPFQPOAGEH-----
 PMQPQPVPVNPNSMHPQ
 Thamnophis GHNALIPHYL----PIQHPLQPOAGEH-----
 PMQPQPVPVNPNSMNPQ
 Crotalus_horrid GHNTLIPHYQ----SVQYPLQPQTGEH-----
 PMKPQPVPVNPNSMNPQ
 Crotalus_mitche GHNTLIPHYQ----SVQYPLQPQTGEH-----
 PMKPQPVPVNPNSMNPQ
 Protobothrops GHNTLIPHYQ----SVQYPLQPQTGEH-----
 PMKPQPVPVNPNSMNPQ
 Vipera GHNTLMPHYQ----SIQYPLQPQTGEH-----
 PMKPQPVPVNPNSMNPQ
 Python_mulurus GHNPLIPHYQ----PIQHPLQPOAGEH-----
 PMQ---PVNPNQSVHPQ
 Cobra GHNTLIPHYQ----SIQHPLQPOAGEH-----

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PMQPQPPINPNQSMNPQ
Pantherophis  GHNALIPHY-----QHPLQPQAGEH-----
PMQPLPPVNP---MNPQ
Ctenosaurs    QNTLMPQFQ-----PAHGALPPQIGEH-----
PMYPQQHGNPMPPIHPQ
Pogona        QSTLTPQYQPAHAGPVHQPFPPVAGEA-----
PMQPQLPAHPNQPMHPQ
Eublepharis   QNT-MPQYQP--GVAVQHPPFPHAGEH-----
PVHHQQPGNPNQPMQP-
MournGekko    QNT-MPHYPA--GVPVQN--PPHAGEH-----
PGHHQQPGNPNHPMQP-
Gekko_japon   QNT-MPHYPA--GVPVQN--PPHAGEH-----
PGHHQQPGNPNHPMQP-
Aspidoscelis  QNGIVPHYPO----PQQHPPPPPAGEH-----
PSHPYQPVNGVQPQHPL

```

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*          . *          * :          :          * **

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Allig_sinensis  QPGIPNPPMY---PMQPLPPLLPDMPLPWRPMDKTKQEEID-
Allig_mississip QPGIPNPPMY---PMQPLPPLLPDMPLPWRPMDKTKQEEID-
Crocodilus_poro QPGIPNPPMY---PMQPLPPLLPDMPLPWRPMDKTKQEEID-
Gharial         QPGIPNPPMY---PMQPLPPLLPDMPLPWRPMDKTKQEEID-
Paleosuchus     QPGIPNPPMY---PMQPLPPLLPDMPLPWRPMDKTKQEEID-
Anolis          QPANPNSPIY---PVQQLPPLISDTPLESWPPADKTKQEEVD-
Ophisaurus      QPGNPNQPMY---PIQ--PPLIPDTPLESWPPADKTKQEEVD-
Shinisaurus     QPGNPVHPMY---PIQPMPLIPDTPLESWPPADKTKQEEVHD
Boa_constrictor QPGNANQPIY-----PLPPLIPDTPLESWP-ADKTKQEEVD-
Thamnophis      QPGNANQPMY-----PLPPLIPDTPLESWP-ADNTKKEEVD-
Crotalus_horrid QSGNANQPIY-----PLPPLIPDTPLESWP-ADKTKQEEVD-
Crotalus_mitche QSGNANQPIY-----PLPPLIPDTPLESWP-ADKTKQEEVD-
Protobothrops   QSGNANQPIY-----PLPPLIPDTPLESWP-ADKTKQEEVXX
Vipera          QSGNANQPIY-----PLPPLIPDTPLESWP-ADKTKQEEVXX
Python_mulurus  QPGSANQPIY-----PLPPLIPDTPLESWP-ADKTKQEEVXX
Cobra           QPGIANQPMY-----PLPPLIPDTPLESWP-ADKTKKEEVD-
Pantherophis    QPGNANQPMY-----PLPPLIPDTPLESWP-ADKTKKEEVD-
Ctenosaurs      QPANPNPPMY---PVQPHAPVFPDTPLESWPAADKTKQEEVDX
Pogona          LPAHPNQPMF---PMQPLPPLMPDTPLESWVPDCKTKQEEVDX
Eublepharis     --GNPNQPVYQVHPVPPPLPPVIHDAP-EPWPGTDKTKQEEVK-
MournGekko      --GGPNQPMYPVHPVQPLPPVIHDAPLEPWPBGTDKTKQEEVYE
Gekko_japon     --GGPNQPMYPVHPVQPLPPVIHDAPLEPWPBGTDKTKQEEVYE
Aspidoscelis    T-GNTNQPIY---QAQPQLPVIRDTPLE-WPAPDKTKQEEVXX
. . *::          *:: * * * * * *::*:*:*:

```

Reptile-AMEL_CDS-Aln.txt

PAL2NAL output

CLUSTAL W multiple sequence alignment

Allig_sinensis
ATGGAGGGCTGGATGTTGATCACTTGCCTACTAGGTGCAACATTTGCTATACCA-----
Allig_mississip
ATGGAGGGCTGGATGTTGATCACTTGCCTACTAGGTGCAACATTTGCTATACCA-----
Crocodilus_poro
ATGGAGGGCTGGATGCTGATCACTTGCCTACTAGGTGCAACATTTGCTATACCA-----
Gharial
ATGGAGGGCTGGATGTTGATCACTTGCCTACTAGGTGCAACATTTGCTATACCA-----
Paleosuchus
ATGGAGGGCTGGATGTTGATCACTTGCCTACTAGGTGCAACATTTGCTATACCA-----
Anolis
ATGGAAGGCTGGACTTTGGTTATGTGCCTTTTAAGTACCACATTTGCTATTTCCA-----
Ophisaurus
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAGTACCACATTTGCTCTTCCG-----
Shinisaurus
ATGATGAGCTGGACTTTGGTTATGTGCCTCTTAAGTAGCACATTTGCTCTTCCACCACAG
Boa_constrictor
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAGTACTGCATTTGCAATCCCA-----
Thamnophis
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAGTACTGCATTTGCAATCCCA-----
Crotalus_horrid
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAATTCTGCATTTGCAATCCCA-----
Crotalus_mitche
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAATTCTGCATTTGCAATCCCA-----
Protobothrops
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAGTTCTGCATTTGCAATCCCA-----
Vipera
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAGTTCTGCATTTGCAATCCCA-----
Python_mulurus
ATGGAGAGCTGGACTTTGCTTATGTGCCTCTTAAGTACTGCATTTGCAATCCCA-----
Cobra
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAGTACTGCATTTGCAATCCCA-----
Pantherophis
ATGGAGAGCTGGACTTTGGTTATGTGCCTCTTAAGTACTACATTTGCAATCCCA-----
Ctenosaurs
ATGGGGGGCTGGACTTTGGTTATGTGCCTCTTATGTACCACATTGGCTATTTCCA-----
Pogona
ATGGAGGGCTGGACTTTGATTATGAGCCTCTTATGTACTACACTTGCTATTTCCA-----
Eublepharis
ATGAAGGGCTGGACTTTGTTTATGTGTCTCTTCAGTGCTGCATTTTCTCTTTCCA-----
MournGekko
ATGAAGAGCTGGACTTTGCTTATCTGCCTCTTCAGTGCTGTATTTTCTCTTTCCA-----
Gekko_japon
ATGAAGAGCTGGACTTTGCTTATCTGCCTCTTCAGTGCTGTATTTTCTCTTTCCA-----

Aspidoscelis

ATGGAAGGCTGGACTTTGGTTATGTGCTTTTTTAAGTGCTACATTTGCTGTTCCA-----

Allig_sinensis

GTGCCTCCCCATCCACATCATCCTGGTTATGTCAACTTCAGTTATGAGGTGTTAACACCT

Allig_mississip

GTGCCTCCCCATCCACATCATCCTGGTTATGTCAACTTCAGTTATGAGGTGTTAACACCT

Crocodilus_poro

GTGCCTCCCCATCCACATCATCCTGGTTATGTCAACTTCAGTTATGAGGTGTTAACACCT

Gharial

GTGCCTCCCCATCCACATCATCCTGGTTATGTCAACTTCAGTTATGAGGTGTTAACACCT

Paleosuchus

TTGCCTCCCCATCCACATCATCCTGGTTATGTCAACTTCAGTTATGAGGTGTTAACACCT

Anolis

TTGCCA-----

CAACATCCTGGTTATATCAATTTTCAGTTATGAGGTAATGACACCT

Ophisaurus

CTGCCA-----

CAACATCCTGGTTATATCAATTTTCAGTTATGAGGTAATGACACCT

Shinisaurus

CTGCCA-----

CAACATCCTGGTTATATCAATTTTCAGTTATGAGGTAATGACACCT

Boa_constrictor

CTACCA-----

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Thamnophis

CTACCA-----

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Crotalus_horrid

CTACCA-----

CAACATCCTGGTTATATCAATTTTCAGTTATGAGGTGATGACACCT

Crotalus_mitche

CTACCA-----

CAACATCCTGGTTATATCAATTTTCAGTTATGAGGTGATGACACCT

Protobothrops

CTACCA-----

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Vipera

CTACCA-----

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Python_mulurus

CTACCA-----

CAACATCCTGGTTATATCAACTTCAGTTATGAGGTAGTGACACCT

Cobra

CTACCA-----

CAACATCCTGGTTATATCAATTTTCAGTTATGAGGTGTTGACACCT

Pantherophis

CTACCA-----

CAACATCCTGGTTATATCAATTTTCAGTTATGAGGTGATGACACCT

Ctenosaurs

TTGCCA-----

CAGCATCCTGGTTTTATCAATTTTCAGTTATGAGGTAATGACACCT

Pogona

CTACCC-----

CAACATCCTGGTTTTATCAATTTTCAGCTATGAGGTAATGACACCT

Eublepharis

CTGCCT---

CATGCACAACATCCTGGCTATATTAATTTTCAGTTATGAGGTAATGACACCT

MournGekko

CTGCCT---

CACGCACAACATCCTGGCTATATCAATTTTCAGTTATGAGGTAATGACACCA

Gekko_japon

CTGCCT---

CACGCACAACATCCTGGCTATATCAATTTTCAGTTATGAGGTAATGACACCA

Aspidoscelis CTGCCA-----
CAACATCCTGGTTATATCAATTTTCAGTTATGAGGTTACTGACACCT

Allig_sinensis
TTGAAATGGTACCAGAGCCTGATGAGACAACCGTATTCATCCTATGGGTATGAACCAATG

Allig_mississip
TTGAAATGGTACCAGAGCCTGATGAGACAACCGTATTCATCCTATGGGTATGAACCAATG

Crocodilus_poro
TTGAAATGGTACCAGAGCCTGATGAGACAACCGTATTCATCCTATGGGTATGAACCAATG

Gharial
TTGAAATGGTACCAAAGCCTGATGAGACAACCGTATTCATCCTATGGGTATGAACCAATG

Paleosuchus
TTGAAATGGTACCAGAGCCTGATGAGACAACCGTATTCATCCTATGGGTATGAACCAATG

Anolis
TTAAAATGGTACCAGAGCCTAATAGGACACCAGTATCCACGTTATGGCTTTGAACCAATG

Ophisaurus
TTAAAATGGTACCAGAGCCTAATTGGGCATCAGTATCCACGGTATGGCTATGAGCCCATG

Shinisaurus
TTAAAATGGTACCAGAGCCTAATTGGGCATCAGTATCCACGTTATGGCTATGAGCCCATG

Boa_constrictor
TTGAAATGGTATCAGAGCATAATCGGACACCAGTATCCACGTTATGGCTATGAGCCCATG

Thamnophis
TTGAAATGGTATCAGAGCATAATTGGACATCAGTATCCACGTTACGGCTATGAGCCCATG

Crotalus_horrid
TTGAAATGGTATCAGGGCATAATTGGACATCAGTATCCACGTTATGGCTATGAGCCCATG

Crotalus_mitche
TTGAAATGGTATCAGGGCATAATTGGACATCAGTATCCACGTTATGGCTATGAGCCCATG

Protobothrops
TTGAAATGGTATCAGGGCATAATTGGACATCAGTATCCACGTTATGGCTATGAGCCCATG

Vipera
TTGAAATGGTATCAGGGCATAATTGGACATCAGTATCCACGTTATGGCTATGAGCCCATG

Python_mulurus
TTGAAATGGTATCAGAGCATAATTGGACATCAGTATCCACGTTATGGCTATGAGCCCATG

Cobra
TTGAAATGGTATCAGAGCATAATTGGACCTCAGTATCCACGTTATGGTTATGAGCCCATG

Pantherophis
TTGAAATGGTTTCAGAGCATAATTGGACACCAGTATCCACGTTACGGCTATGAGCCCATG

Ctenosaurs
TTAAAATGGTACCAGAGCCTAATGGGACCCAGTATCCACGTTATGGTTATGAACCAATG

Pogona
TTGAAATGGTACCAGGGTGTAATGGGACACCAGTATCCACGTTATGGTTACGAGCCAATG

Eublepharis
TTAAAATGGTACCAGAGCCTGATTGGACACCAGTATCCACGTTATAGCTATGAACCTATG

MournGekko
TTAAAATGGTACCAGAGCCTGATTGGACACCAGTACCCACGTTATAGCTATGAACCTATG

Gekko_japon
TTAAAATGGTACCAGAGCCTGATTGGACACCAGTACCCACGTTATAGCTATGAACCTATG

Aspidoscelis

TTAAAATGGTACCAGAGCTTAGTTGGACCCAGCTTCCGCATTATGGCTATGGGCCCATG

Allig_sinensis

GGAGGATGGCTACACCAGCCAATGTTACCAATAGCCCAA-----

Allig_mississip

GGAGGATGGCTACACCAGCCAATGTTACCAATAGCCCAA-----

Crocodilus_poro

GGAGGATGGCTACACCAGCCAATGTTACCAATAGCCCAA-----

Gharial

GGAGGATGGCTACACCAGCCAATGTTACCAATAGCCCAA-----

Paleosuchus

GGAGGATGGCTACACCAGCCAATGTTACCAATAGCCCAA-----

Anolis

GGAGGATGGATGCACCATGCTGCAGGACCAACAATGCAC---

CAAACCTACCTTCCAAAGC

Ophisaurus

GGAGGATGGATGCACCACAGTACAGGGCCAATGACGCAC---

CAACCTTACTTTCAAGGG

Shinisaurus

GGAGGATGGATGCACCACACTTCTGGGCCCGTGACGCAC---

CAAACCTCACTTTCAAGGG

Boa_constrictor

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CCAACCTCACTTTCATGGG

Thamnophis

GGAGGGTGGATGCACCATAATGCAGGACCATTGATGCAC---

CCAACCTCACTTTCATGGG

Crotalus_horrid

GGAGGATGGATGCACCATAATGCAGGACCAATGATGCAC---

CCAACCTCACTTTCATGGG

Crotalus_mitche

GGAGGATGGATGCACCATAATGCAGGACCAATGATGCAC---

CCAACCTCACTTTCATGGG

Protobothrops

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CCAACCTCACTTTCATGGG

Vipera

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Python_mulurus

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CCAACCTCATTTTCATGGG

Cobra

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CCAACCTCACTTT-----

Pantherophis

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CCACCTCACTTTCATGGG

Ctenosaurs

GGAGGATGGATGCGCCATGCTACAGGACCAATGATGCAC---

CAAACCTCACATTCAAAAC

Pogona

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CAAGCTCCCTTTCAAACCT

Eublepharis

GGAGGATGGATGCACCACCATAACAGGGCCAGCGATGCCTCCCCACTCTTCTTTTCCAGGC

MournGekko

GGAGGATGGATGCACCACCATAACAGGGCCTCAC-----

CACTCTCCTTATCTAGGT

Gekko_japon

GGAGGATGGATGCACCACCATAACAGGGCCTCAC-----

CACTCTCCTTATCTAGGT

Aspidoscelis GCAGGTTGGATTCAACATTCTGGAGGACCAGCGATGCC---
CATGCTCAATTTCAA---

Allig_sinensis -----
CAGCATCCACCCATCCAGACTCTCACACCTCACCACCAGATCCCCTTCCTG

Allig_mississip -----
CAGCATCCACCCATCCAGACTCTCACACCTCACCACCAGATCCCCTTCCTG

Crocodilus_poro -----
CAGCATCCACCCATCCAGACTCTCACACCTCACCACCAGATCCCCTTCCTG

Gharial -----
CAGCATCCACCCATCCAGACTCTCACACCTCACCACCAGATCCCGTTCCTG

Paleosuchus -----
CAGCATCCACCCATCCAGACTCTCACACCTCACCACCAGATCCCCTTCCTG

Anolis
CATCCTTCAAGTGCCTCAACTCTCCATCAAATGCAGCCACCACAT-----

Ophisaurus ---AATCCAATGCAC-----
CTACATCCAATGCAGCCCCAGCAG-----

Shinisaurus CTCCATCCAATGCACCCT---
CTCCATCAAATACACCCGCAGCAG-----

Boa_constrictor
GTCCATGCAATGCACCCAGCTCTCCATCAAATGCAGCCACAACAG-----

Thamnophis
GTCCATGCAATACACCCAGCTCTCCATCAGATGCAGCCACAGCAG-----

Crotalus_horrid
GTCCATGCAATACACCCAGCTCTCCATCAAATGCAACCACTACAG-----

Crotalus_mitche
GTCCATGCAATACACCCAGCTCTCCATCAAATGCAACCACTACAG-----

Protobothrops
GTCCATGCAATACACCCAGCTCTCCATCAAATGCAACCACTACAG-----

Vipera
ATCCATGCAATACACCCAGCTCTTCATCAAATGCAACCACTACAG-----

Python_mulurus
GTCCATGCAATGCACCCATCTCTCCATCCAATGCAGCCACAACAG-----

Cobra ---
CATGCAATTCACCCAGCTCTCCATCAAATGCAGCCACCACAG-----

Pantherophis
GTCCATGCAATACACCCAGCTCTCCATCAAAGCAGCCACATCAG-----

Ctenosaurs
CTTCTCCAATGCACTCGCCTATCCATCAGATGCAGCCACAGCAC-----

Pogona CTCCATCCAATGCCACCACCTCTCCACCAGGTGCAG---
CAACAG-----

Eublepharis
TTCAGCAAATTCATGCACCATCCCACCAAATGCACCCCTCACAGCAA-----CACCTG

MournGekko
TTCAGCAAATTCATCCACTGCCCCACCAAATGCATCCCTCACAGCAA-----CACTTG

Gekko_japon
TTCAGCAAATTCATCCACTGCCCCACCAAATGCATCCCTCACAGCAA-----CACTTG

Aspidoscelis -----
 ATGCACAACCCTCTTCATCAAGTACAGCCACATCTG-----

 Allig_sinensis ---
 TCACCCAGCATCCGCTGATGCAAATGCCAGGTCCACATCAAATGATGCCT-----
 Allig_mississip ---
 TCACCCAGCATCCGCTGATGCAAATGCCAGGTCCACATCAAATGATGCCT-----
 Crocodilus_poro ---
 TCACCCAGCACCCACTGATGCAAATGCCAGGTCCACAACAAATGATGCCT-----
 Gharial ---
 TCACCCAGCACCCGCTGATGCAAATGCCAGGTCCACAACAAATGATGCCT-----
 Paleosuchus ---
 TCACCCAGCACCCACTGATGCAAATGCCAGGTCCACATCAAATGATGCCT-----
 Anolis ---
 CCAGCACTGAACCCACACATGCAGCCACCTGGGCACAACCCATTTGGGCCAATGCCT
 Ophisaurus ---
 CCACCCATAAACCACACATGCAGTATCCTGGCCATAACTCATACGGGCCAATGACT
 Shinisaurus ---
 CCACCTGTGAATCCACCCATGCAGCAGCCTGGGCATAACCCATTTGTGCCGATGACT
 Boa_constrictor ---
 CCACCTACAATCCACATTTGCAGCAACCTGGTCATAACCCATTTGTCCAATTCAT
 Thamnophis ---
 CCTCCTCAGAACCCACATTTGCAGCAACCAGGCCTTAACCCATTTGTTCAACTAAAT
 Crotalus_horrid ---
 CCCCTCAGAACCCACATTTGCAGCAACCAGGTCTTAACCCATTTGTTCCACTAAAT
 Crotalus_mitche ---
 CCCCTCAGAACCCACATTTGCAGCAACCAGGTCTTAACCCATTTGTTCCACTAAAT
 Protobothrops ---
 CCCCTCAGAACCCACATTTGCAGCAACCAGGTCTTAACCCATTTGTTCCACTAAAT
 Vipera ---
 CCCCTCAGAACCCACATTTGCAGCAACCAGGTCTTAACCCATTTGTTCCATTAAAT
 Python_mulurus ---
 CCACCTCAGAACCCACATCTGCAGCAACCTGGCCATAACCCATTTATCCAATAACT
 Cobra ---
 CTCCTCAGAACCCACATTTGCAGCAACCAGGTCTTAACCCATTTGTTCCACTAAAT
 Pantherophis ---
 CTTCTCAGAACCCACAATTGCAGCAACCAGGCCTTAATGCATTTGTTCCACTAAAT
 Ctenosaurs ---
 CAAATTCTGAACCCACAAATGCCACAACCAGGGCACAACGGATTTGTGCCACTGCCT
 Pogona ---
 CCTCCTCTGAACCCACACATGCAGCTACCTGGGCATAACACACTTGTGCCAATGACT
 Eublepharis
 CAACCACCCCTGAACACACCAGTGCAACCAGCTGGGCATAGCCCTTTTGGTCACATGCCT
 MournGekko ---
 CCACCTATGAACACACCACTGCAACCAGTTGGGCATGCCCTTTTGGTCAAATGCCT
 Gekko_japon ---
 CCACCTATGAACACACCACTGCAACCAGTTGGGCATGCCCTTTTGGTCAAATGCCT

Aspidoscelis -----
 CAATCTTTCCCATCACATCCAGCCTATCACCCAATAGGCCCCATGCCT

Allig_sinensis -----
 ATACCACAGCAACAACCAAGCCTACAAATGCCAGTCCAAGAGCCA

Allig_mississip -----
 ATACCACAGCAACAACCAAGCCTACAAATGCCAGTCCAAGAGCCA

Crocodilus_poro -----
 ATACCACAGCAACAACCAAGCCTGCAAATGCCAGTCCAAGAACCA

Gharial -----
 ATACCACAGCAACAACCAAGCCTGCAAATGCCAGTCCAAGAACCA

Paleosuchus -----
 ATACCACAGCAACAACCAAGCCTACAAATGCCAGTCCAAGAGCCA

Anolis
 GGTCAAATAACATTGATGCCCCAGTTTCAACCAGCTCATGGAGGACCAATTCATCATCCA

Ophisaurus
 GGACAAGATACATTAATGCCACACTACCCACCACCTCAAGTAGGACCAGTCCAACATCCG

Shinisaurus
 GGGCAAATCCATTAATGCCACAATATCAACCAACTCACACAGGAACAGTCCAGCATCCA

Boa_constrictor GGCATAACACATTAATTCCACACTATCAG-----
 CCTGTACAACATCCA

Thamnophis GGCATAATGCATTAATTCCACACTATCTG-----
 CCTATACAGCATCCA

Crotalus_horrid GGCATAACACATTAATTCCACACTATCAG-----
 TCTGTACAGTATCCA

Crotalus_mitche GGCATAACACATTAATTCCACACTATCAG-----
 TCTGTACAGTATCCA

Protobothrops GGCATAATACATTAATTCCACACTATCAG-----
 TCTGTACAGTATCCA

Vipera GGCATAATACATTAATGCCACACTATCAG-----
 TCTATACAGTATCCA

Python_mulurus GGCATAAACCATTAATTCCACACTATCAG-----
 CCTATACAACATCCA

Cobra GGCATAATACATTAATTCCACACTATCAG-----
 TCTATACAGCATCCA

Pantherophis
 GGCATAATGCATTAATTCCACACTAT-----CAGCATCCA

Ctenosaurs GGTCAAATAACATTGATGCCGCAGTTTCAA-----
 CCAGCTCATGGAGCA

Pogona
 GGGCAGAGTACATTAACGCCACAGTATCAACCAGCTCATGCAGGTCCAGTTCACCAGCCA

Eublepharis GGACAAAACACA---ATGCCACAGTACCAGCCA-----
 GGAGTAGCAGTGCAACACCCA

MournGekko GGACAAAACACA---ATGCCACACTACCCGGCA-----
 GGAGTACCAGTTCAAAC---

Gekko_japon GGACAAAACACA---ATGCCACACTACCCGGCA-----
 GGAGTACCAGTTCAAAC---

Aspidoscelis GGCCAAAATGGAATAGTCCCACATTATCCTCAG-----
CCTCAGCAACATCCA

Allig_sinensis
GTCCAACCACAGGCAGGTGAACATCCAAGCCCACCACTGCAGCCCCAACCAACCTGGGCAT

Allig_mississip
GTCCAACCACAGGCAGGTGAACATCCAAGCCCACCACTGCAGCCCCAACCAACCTGGGCAC

Crocodilus_poro
GTCCAACCACAGCCAGGTGAACATCCAAGCCCACCACTGCAGCCCCAACCAACCTGGGCAT

Gharial
GTCCAACCACAGGCAGGTGAACATCCAAGCCCACCACTGCAGCCCCAACCAACCTGGGCAT

Paleosuchus
GTCCAACCACAGGCAGGTGAACATCCAAGCCCACCACTGCAGCCCCAACCAACCTGGGCAC

Anolis
TTCCAACCACATGCAGGAGAACAC-----

Ophisaurus
CCTCCACCACACGCAGGAGAGTAC-----

Shinisaurus
CTTGTACCACATGCAGGAGAGCAC-----

Boa_constrictor
TTTCAACCACAAGCTGGGGAGCAT-----

Thamnophis
CTTCAACCACAAGCAGGCGAGCAT-----

Crotalus_horrid
CTTCAACCACAAACAGGCGAGCAT-----

Crotalus_mitche
CTTCAACCACAAACAGGCGAGCAT-----

Protobothrops
CTTCAACCACAAACAGGCGAGCAT-----

Vipera
CTTCAACCACAAACAGGCGAGCAT-----

Python_mulurus
CTTCAGCCACAAGCAGGAGAGCAT-----

Cobra
CTTCAACCACAAGCAGGCGAGCAT-----

Pantherophis
CTTCAACCACAAGCAGGCGAGCAT-----

Ctenosaurs
CTACCACCACAAATAGGAGAACAC-----

Pogona
TTTCCACCAGTTGCAGGAGAGGCA-----

Eublepharis
TTTCCACCACATGCAGGAGAGCAT-----

MournGekko ---
CCACCACATGCAGGAGAGCAT-----

Gekko_japon ---
CCACCACATGCAGGAGAGCAT-----

Aspidoscelis

CCTCCACCCCCAGCAGGAGAACAT-----

Allig_sinensis

CCGAATCCACCGATGCAGCCTCAGCTACCTGGGAGTCCACACCCACCAATGCAGCCCCAG

Allig_mississip

CCGAATCCACCGATGCAGCCTCAGCTACCTGGGAGTCCACACCCACCAATGCAGCCCCAG

Crocodilus_poro

CCAAATCCACCGATGCAGCCTCAGCTACCTGGGAGTCCACACCCACCAATGCAGCCCCAG

Gharial

CCAAATCCACCAATGCAGCCTCAGCTACCTGGGAGTCCACACCCACCAATGCAGCCCCAG

Paleosuchus

CCGAATCCACCGATGCAGCCTCAGCTACCTGGGAGTCCACACCCACCAATGCGGCCCCAG

Anolis

CCAATGCACCCTCAGCAAACAGGGAATCCAGTCCACCCAATGCATCCTCAG

Ophisaurus

CCAATGCACCCCCAGCAACCAGGGAACCGAAATCACCCAATGCACCCTCAG

Shinisaurus

CCAATGCACCCCCAGCAACCAGGGAACCCAAATCAGCCAATGCACCCTCAG

Boa_constrictor

CCAATGCAACCCCAGCCACCAGTGAATCCAAATCAATCAATGCACCCTCAG

Thamnophis

CCAATGCAACCCCAACCACCAGTAAATCCAAATCAATCAATGAACCCTCAG

Crotalus_horrid

CCAATGAAACCCCAGCCACCAGTAAATCCAAATCAATCAATGAACCCTCAG

Crotalus_mitche

CCAATGAAACCCCAGCCACCAGTAAATCCAAATCAATCAATGAACCCTCAG

Protobothrops

CCAATGAAACCCCAGCCACCAGTAAATCCAAATCAATCAATGAACCCTCAG

Vipera

CCAATGAAACCCCAGCCACCAGTAAATCCAAATCAATCAATGAACCCTCAA

Python_mulurus

CCAGTGAATCCAAACCAATCAGTGCACCCTCAA

Cobra

CCAATGCAACCCCAACCACCAATAAATCCAAATCAATCTATGAACCCTCAG

Pantherophis

CCAATGCAACCCCTACCACCAGTAAATCCA-----ATGAACCCTCAG

Ctenosaurs

CCAATGTATCCCCAGCAACATGGGAATCCAATGCCGCAATCCACCCTCAG

Pogona

CCGATGCAACCTCAACTACCAGCACATCCAAATCAGCCAATGCACCCTCAG

Eublepharis

CCTGTGCATCACCAGCAACCTGGGAATCCAAACCAGCCAATGCAGCCT---

MournGekko

CCTGGGCACCACCAGCAGCCTGGGAATCCAAACCACCCAATGCAGCCT---

Gekko_japon

CCTGGGCACCACCAGCAGCCTGGGAATCCAAACCACCCAATGCAGCCT---

Aspidoscelis -----
 CCAAGTCACCCCTATCAGCCAGTGAATGGAGTTCAGCCACAACATCCCCTA

Allig_sinensis CAGCCTGGGATTCCAAACCCACCAATGTAC-----
 CCAATGCAGCCATTGCCACCA
 Allig_mississip CAGCCTGGGATTCCAAACCCACCAATGTAC-----
 CCAATGCAGCCATTGCCACCA
 Crocodilus_poro CAACCTGGGATTCCAAACCCACCAATGTAC-----
 CCAATGCAGCCATTGCCACCA
 Gharial CAACCTGGGATTCCAAACCCACCAATGTAC-----
 CCAATGCAGCCATTGCCACCA
 Paleosuchus CAGCCTGGGATTCCAAACCCACCAATGTAC-----
 CCAATGCAGCCATTGCCACCA
 Anolis CAACCAGCAAATCCAAATTCACCAATTTAC-----
 CCAGTTCAGCAATTGCCACCA
 Ophisaurus CAACCAGGGAATCCTAACCAGCCAATGTAT-----
 CCAATTCAG-----CCTCCA
 Shinisaurus CAACCAGGGAATCCTGTCCACCCAATGTAT-----
 CCAATTCAGCCGATGCCTCCA
 Boa_constrictor
 CAACCAGGGAATGCCAATCAGCCCATATAT-----CCACTACCTCCA
 Thamnophis
 CAACCAGGGAATGCCAATCAGCCCATGTAC-----CCACTACCTCCC
 Crotalus_horrid
 CAATCAGGGAATGCCAATCAGCCCATATAC-----CCACTACCTCCC
 Crotalus_mitche
 CAATCAGGGAATGCCAATCAGCCCATATAC-----CCACTACCTCCC
 Protobothrops
 CAATCAGGGAATGCCAATCAGCCCATATAC-----CCACTACCTCCC
 Vipera
 CAATCAGGGAATGCCAATCAGCCCATATAT-----CCACTACCTCCC
 Python_mulurus
 CAACCAGGGAGTGCCAATCAGCCCATATAT-----CCACTACCTCCA
 Cobra
 CAACCAGGGATTGCCAATCAGCCCATGTAC-----CCACTACCACCC
 Pantherophis
 CAACCAGGGAATGCCAATCAGCCCATGTAC-----CCACTACCTCCC
 Ctenosaurs CAACCAGCAAATCCGAATCCACCAATGTAC-----
 CCAGTTCAGCCACATGCACCA
 Pogona CTACCAGCACATCCAAATCAGCCAATGTTC-----
 CCAATGCAGCCACTGCCTCCA
 Eublepharis -----
 GGCAATCCAAACCAGCCAGTTTACCAAGTGCATCCAGTGCCTCCACTGCCACCA
 MournGekko -----
 GGCGGTCCAAACCAGCCCATGTACCCTGTGCATCCAGTGCAGCCACTGCCACCA
 Gekko_japon -----
 GGCGGTCCAAACCAGCCCATGTACCCTGTGCATCCAGTGCAGCCACTGCCACCA

Aspidoscelis ACA---GGAAACACCAACCAGCCAATATAC-----
CAAGCACAGCCACAGCTTCCA

Allig_sinensis
CTGCTGCCGGACATGCCACTAGAACCATGGCGGCCAATGGACAAGACCAAGCAAGAGGAA

Allig_mississip
CTGCTGCCGGACATGCCACTAGAACCATGGCGGCCAATGGACAAGACCAAGCAAGAGGAA

Crocodilus_poro
CTGCTGCCGGACATGCCACTAGAACCATGGCGGCCAATGGACAAGACCAAGCAAGAGGAA

Gharial
CTGCTGCCAGATATGCCACTAGAACCATGGCGGCCAATGGACAAGACCAAGCAAGAGGAA

Paleosuchus
CTGCTGCCGGACATGCCACTAGAACCATGGCGGCCAATGGACAAGACCAAGCAAGAGGAA

Anolis
CTGATATCAGATACACCTCTTGAATCATGGCCACCAGCTGACAAGACCAAGCAAGAAGAA

Ophisaurus
CTGATCCCAGATACACCTCTTGAATCATGGCCACCAGCTGACAAGACCAAGCAAGAGGAA

Shinisaurus
CTGATCCCAGATACACCTCTTGAATCATGGCCACCAGCTGACAAGACCAAGCAAGAGGAA

Boa_constrictor CTTATCCCAGATACTCCTCTTGAATCATGGCCA---
GCTGACAAGACCAAGCAAGAAGAA

Thamnophis CTTATTCCAGATACACCTCTTGAATCATGGCCA---
GCTGATAACACCAAGAAAGAAGAA

Crotalus_horrid CTTATCCCAGATACACCTCTTGAATCATGGCCA---
GCTGATAAGACCAAGCAAGAAGAA

Crotalus_mitche CTTATCCCAGATACACCTCTTGAATCATGGCCA---
GCTGATAAGACCAAGCAAGAAGAA

Protobothrops CTTATCCCAGATACACCTCTTGAATCATGGCCA---
GCTGATAAGACCAAGCAAGAAGAA

Vipera CTTATCCCAGATACACCTCTTGAATCATGGCCA---
GCTGATAAGACCAAGCAAGAAGAA

Python_mulurus CTTATCCCAGATACGCCTCTTGAATCATGGCCA---
GCTGACAAAACCAAGCAAGAAGAA

Cobra CTTATCCCAGATACACCTCTTGAATCATGGCCA---
GCTGACAAGACCAAGAAAGAAGAA

Pantherophis CTTATCCCAGATACACCTCTTGAATCATGGCCA---
GCTGACAAAACCAAGAAAGAAGAA

Ctenosaurs
GTGTTCCCAGACACACCTCTTGAATCGTGGCCAGCAGCAGACAAGACCAAGCAGGAAGAA

Pogona
CTGATGCCAGATACACCTCTTGAATCATGGCCAGTACCCGATAAGACCAAGCAAGAAGAA

Eublepharis GTGATTCACGATGCTCCT---
GAACCATGGCCAGGAACAGACAAGACCAAGCAAGAGGAA

MournGekko
GTGATACATGATGCTCCTCTTGAACCATGGCCAGGAACAGATAAGACCAAGCAAGAAGAA

Gekko_japon
GTGATACATGATGCTCCTCTTGAACCATGGCCAGGAACAGATAAGACCAAGCAAGAAGAA

Aspidoscelis GTGATTTCGAGATACACCTCTTGAA---
TGGCCAGCACCTGACAAGACCAAGCAAGAAGAA

Allig_sinensis ATAGAT---
Allig_mississip ATAGAT---
Crocodilus_poro ATAGAT---
Gharial ATAGAT---
Paleosuchus ATAGAT---
Anolis GTGGAC---
Ophisaurus GTGGAT---
Shinisaurus GTGCATGAC
Boa_constrictor GTGGAT---
Thamnophis GTGGAT---
Crotalus_horrid GTGGAT---
Crotalus_mitche GTGGAT---
Protobothrops GTGNNNNNN
Vipera GTGNNNNNN
Python_mulurus GTGNNNNNN
Cobra GTGGAT---
Pantherophis GTGGAT---
Ctenosaurs GTGGACNNN
Pogona GTGGATNNN
Eublepharis GTGAAG---
MournGekko GTGTATGAG
Gekko_japon GTGTATGAG
Aspidoscelis GTGNNNNNN

Reptiles-ENAM_AA-Aln.txt

CLUSTAL format alignment by MAFFT (v7.370)

Allig_mississip MF--LQFLCLFGMSIAVPMRLPRKAGFGSKSEEMMQY-
GQYAYMNSPAM----NPFYGYG
Allig_sinensis MF--LQFLCLFGMSIAVPMRLPRKAGFGSKSEEMMQY-
GQYAYMNSPAM----NPFYGYG
Gharial MF--LQFLCLFGMSIAVPMRLPRKAGFGSKSEEMMQY-
GQYAYMNSPAM----NPFYGYG
Crocodilus_nilo MF--LQFLCLFGMSIAVPMRLPRKAGFGSKSEEMMQY-
GQYAYMNSPAM----NPFYGYG
Crocodilus_poro MF--LQFLCLFGMSIAVPMRLPRKAGFGSKSEEMMQY-
GQYAYMNSPAM----NPFYGYG
Aspidoscelis
MKLILLYACLMGSSCAALLRKPRQAGFGSKSEEMMQFGGPFYGLNSPHLAHLAASLYGFR
Shinisaurus XXXXXXXXXXXXXXXXXXXXLRKPRKAGFGSKSEEMMQF-

GPYGYINSP---QLAASLYGYR
 Ophisaurus MKLILLFLCLVGTSCAVPLRKPRKAGFGSKSEEMMQF-
 GPYSYMNSPQLAQLAASLYGYR
 Anolis MKQLLLYLCLIGTSWAVRLRKPRKAGFGSKSEEMMQY-
 GPFYLNSPQLTQLAASLYGYR
 Eublepharis MKIIVLCLCLVSITCAIPLRKPRKAGFGSKSEEMMQF-
 GPYSYMNSP---QLAPLLYGYR
 MournGekko MKIILMYLCLVGTSCAILLRKPRRAGFGSKSEEMMQF-
 GPYAYMNSP---QLSPFLYGYR
 Gekko_japon MKIILMYLCLVGTSCAILLRKPRRAGFGSKSEEMMQF-
 GPYAYMNSP---QLSPFLYGYR
 Python MKLILLYLCLVGISYAGPLRKPRRAGYGSKSEEMTQF-
 GPYGYIQSP---QVTGPFYGYH
 Boa_constrictor MKLILLYLCLVGISYAGPLRKPRKAGYGESEEMMQF-
 SPYGYIHSP---QVAGSFYGYH
 Vipera MKLILLYLCLVGISYAGPLRKPRRAGYGSKSEEMMQF-
 GPYGYINSP---QVAGSFY---
 Protobothrops MKLILLYLCLVGISYAGPLRKPRRAGYGSKSEEMMQF-
 GPYGYINSP---QVAGSFYGYP
 Croc_horrid MKLILLYLCLVGISYAGPLRKPRRAGYGSKSEEMMQF-
 GPYGYINSP---QVAGSFYGYP
 Croc_mitch MKLILLYLCLVGISYAGPLRKPRRAGYGSKSEEMMQF-
 GPYGYINSP---QVAGSFYGYP
 Thamnophis MKLILLYLCLVGMSYAGPLRKPRRAGYGSKSEEMMQF-
 GPYGNINLP---QIAGSFYGYH
 Cobra MKLILLYLCLVGISYASPLRKPRRAGYGSKSEEMMQF-
 GPYGYINSP---QIAGSFYGYH
 Pantherophis MKLILLYLCLVGMSYAGPLRKPRKAGYGSKSEEMMQF-
 GPYGYINSP---QIAGSFYGYH
 Pogona MKLFLVLYLCLVGTSCAIPLRKRKAGFGSKSEEMMPF-
 GAYGFLNSPQLSOLAASLYGYR

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Allig_mississip SSYPQIFQQPVWVWPQQQLYLWQQ-QKPVQPPAIQPQOKPRQAO----
 RSPQPS-----
 Allig_sinensis SSYPQVFQQPVWVWPQQQLYLWQQ-QKPVQPPAIQPQOKPRQAO----
 RSPQPS-----
 Gharial SSYPQVFQQPVWVWPQQQLYLWQQ-QKPVQPPAIQPQOKPRQAO----
 RSPQPS-----
 Crocodilus_nilo SSYPQVFQQPVWVWPQQQLYLWQQ-QKPVQPPAIQPQOKPRQAO----
 RSPQPS-----
 Crocodilus_poro SSYPQVFQQPVWVWP-QQLYLWQQ-QKPVQPPAIQPQOKPRQAO----
 RSPQPS-----
 Aspidoscelis SRQPPLFPQ---LPQRQFLMWQQ-QTPGHQAARLPERKLHKAP----
 GVKHPNM-----
 Shinisaurus ASYPQMFSQQPISPLQRFFLWQP-QTPVHQAARLPQOKPHQTP----

VAKQPNS-----
 Ophisaurus AGYPQMFPQQPGSPLQGFYLLWQP-QTPVHQAARLPQLKPHQTP-----
 VAEQPKS-----
 Anolis SGFPQMVPQQPTFPLQRFYLLWQP-QMPVHQSARPPQOKAHQTP-----
 VPKKPNS-----
 Eublepharis PSYPQLFPQ----PRQRFYIWPQ-QTPAHQAARLPQRKPHQTP-----
 AARQPIQ-----
 MournGekko PSYPQLFPQ----PLQRFYLLWQP-QTPVHQAARLPQRKPHQTL-----
 GARQPIHRPQLPQ
 Gekko_japon PSYPQLFPQ----PLQRFYLLWQP-QTPVHQAARLPQRKPHQTL-----
 GARQPIHRPQLPQ
 Python SSYPQIFPKWPILPLQRFFIWPQPAPPSHQAALPQKKPQQTP-----
 GTKQSNQ-----
 Boa_constrictor SSYPQMFSQWPILPLQRFFPWPQPASPTHQAARLPQOKPPQTP-----
 GIKQPNQ-----
 Vipera -GYPQMFSQWPILPLQRFFLWPQSATPAHQASRLPQOKPQQIP-----
 GTKQPNQ-----
 Protobothrops SGYPQMFSQWPTLPLQRFFLWPPSATPAHQASRLPQOKPQQIP-----
 RTKQPNQ-----
 Crota_horrid SGYPQMFSQWPILPLQRFFLWPQSTTPAHQASRLPQOKPQQIP-----
 GTKQPNQ-----
 Crota_mitch SGYPQMFSQWPILPLQRFFLWPQSTTPAHQASRLPQOKPQQIP-----
 GTKQPNQ-----
 Thamnophis SNYPQMLPQWPVLPLQRFFLWPQSASPVHQAASRLPQOKLQQIP-----
 GTKQPNQ-----
 Cobra SN-PQMFSQWPILPLQRFFLWPQSASPTHQAASRLPQOKPQQIP-----
 RTKQPNQ-----
 Pantherophis SNYPQMFPQWPVLPLQRFFLWPQSASPVHQAASRLPQOKPQQIP-----
 ETKKPNQ-----
 Pogona PSYLQLFPQQSMPPLSRPSLWQQ-
 QMPAHEATRFPSQNPRLPQQPSAARRPNS-----

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Allig_mississip -RPQPQPQPRPQPRQLQPSQ--QP--AKPKPQKPQK-
 QPPPTQPAHPSHSQPPAQRNEEK
 Allig_sinensis -RPQPQPQPRPQPRPQPSQ--QP--AKPKPQKPQK-
 QPPPTQPAHPSHPQPPAQRNEEK
 Gharial -KPQPQPQPRPQQLQPSQ--QP--AKPKPQKPQK-
 PPPPTQPAHPSRPQPPAQRNEEK
 Crocodilus_nilo -RPQPQPQPRPQPRPQPSQ--QP--AKPKPQKPQK-
 PPPPTQPAHPSRPQPPAQRNEEK
 Crocodilus_poro -RPQPQPQPRPQPRPQPSQ--QP--AKPKPQKPQK-
 LPPPTQPAHPSRPQPPAQRNEEK
 Aspidoscelis -RSQPKQLP--P--QPRR--QQ--PQPMPQLPK-LPQNTNPSQT--
 QQVPVQQPKARK
 Shinisaurus -RPQPRPQLL--P--QQPRY--QQ--PQPKMQPPK-QPQNIRPTQT-

RQQVPIQQPKWGN
 Ophisaurus -RPQARPQLP--P-QQPRY--QQ--PQAKIQQPSK-PPQNTTRPTQT-
 HQQVPVQQPKRGN
 Anolis -RPRLKPRLV--P-QQPRY--QQ--PQPKIHLPAKQPPVATHPFQP-
 QPQTPVQPPKGEK
 Eublepharis -RPKLQPQMPQQP-HKPIQ--QQ--PHPKIQQPPK-KPPSTSSPQI-
 HHQGPVYQSKRVQ
 MournGekko LRPQLRPQMPQQP-HKPIQ--QQ--PRPRIQLPPK-KPPNTSPPQT-
 PHQVPVHQSKGVK
 Gekko_japon LRPQLRPQMPQQP-HKPIQ--QQ--PRPRIQLPPK-KPPNTSPPQT-
 PHQVPVHQSKGVK
 Python -RP----QLP--P-RQPRP--QQPPPPPQ----PK-QPQKTNPSHT-
 HPQVPMQHPTEGK
 Boa_constrictor -RP----QLP--P-QQPRY--QQ--PQ-----PK-QPQKTNPSQI-
 YPQVPIQHHPKEGK
 Vipera -RP----QLP--P-QQPRY--QQ--PQPL----PK-QPQKTNPSQT-
 YPQVPFXXXXXX
 Protobothrops -RP----QLP--P-QQPRY--QQ--PQPL----PK-QPQKTNPSQT-
 YPQVPFQHPKEGK
 Crota_horrid -RP----QLP--P-QQPRY--QQ--PQPL----PK-QPQKTNPSQT-
 YPQVPFQHPKEGK
 Crota_mitch -RP----QLP--P-QQPRY--QQ--PQPL----PK-QPQKTNPSQT-
 YPQVPFQHPKEGK
 Thamnophis -RP----QLP--P-QQPRY--QQ--PQPL----PK-QPQKTNPSQT-
 YPQVPFQYPTGK
 Cobra -RP----QLP--PQQPRY--QQ--PQPL----PK-LPQKTNPSQT-
 YPQVPFQHPKEGK
 Pantherophis -RP----QLP--P-QQPRY--QQ--PQPL----PK-QPQKTNPSQT-
 YPQVPFQHPKEGK
 Pogona -RPQPKLQLP--P-QQPTHQVQQ--PQIKVQQPPKLPPSAADPSQP-
 QPQLP-----

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Allig_mississip -----QLSPQVYFPYSNAHFYPYQQQPWHIPQI--YNQGGFLPQ-
 LNPQHRQMPPG--FG
 Allig_sinensis -----QLSPQKCIYPSNAHFYPYQQQPWHIPQI--YNQGGFLPQ-
 LNPQHRQMPPG--FG
 Gharial -----QLSPQVYFPYSNAHFYPYQQQPWHIPQI--YNQGGFLPQ-
 LNPQHRQMPPG--FG
 Crocodilus_nilo -----QLSPQVYFPYSNAHFYPYQQQPWHIPQI--YNQGGFLPQ-
 LNPQHRQMPPG--FG
 Crocodilus_poro -----QLSPQVYFPYSNAHFYPYQQQPWHIPQI--YNQGGFLPQ-
 LNPQHRQMPPG--FG
 Aspidoscelis EQQQQQQQQPQ-----VLPPYLQQPWHFPQI--FRQGAQFQP--
 FGPYQGHMP----LG
 Shinisaurus -----QQQPQ-----ALPPHLQQPWHFPPI--

FGHGGFQPQFRPYQGHVP----FG
 Ophisaurus -----QQPPQ-----AFPPHPQQPWHFPQM--
 FGHGGFQPQSFQPYQGRMP----FG
 Anolis -----PQQPQ-----AFPPHPQQPWQFPQI--
 FGHGGFQPQLFNPNYQGHMP----FG
 Eublepharis -----PQQPQ-----ILFPRQQYPWHFSQI--
 FNQGGFHPQSFQPFQGSMPG--FG
 MournGekko -----QQQPQ-----ILFPNQOHLWHFPQI--
 LSQGGFHPQPFSPFHGRMPAG--FG
 Gekko_japon -----QQQPQ-----ILFPNQOHLWHFPQI--
 LSQGGFHPQPFSPFHGRMPAG--FG
 Python -----QQHPQ-----AFAPYPQQPWHFPQI--
 FGAGGFQPQQFGPYQRHMP----FG
 Boa_constrictor -----QQQPQ-----AFPPYPQQPWHFLQI--
 FGPGCFQPQPFQPYQGHMP----FG
 Vipera -----XXXXX-----GFPPYSQPPWHFPQFPYIVSRGFHPRHL-
 SAMGHMP----FG
 Protobothrops -----QQQPQ-----GFPPYPQPPWHFPQL--
 FGPRGFQPKHFGSYQGHMP----FG
 Crot_horrid -----HQQPQ-----GFPPYLQPPWHFPQL--
 FGSRGFQPKHFESYQGHMP----FG
 Crot_mitch -----QQQPQ-----GFPPYPQPPWNFPQL--
 FGSRGFQPKHFGSYQGHIP----FG
 Thamnophis -----QQQPQ-----GFPPYSQPPWHFPQL--
 FGSRGFQPKRSQGYCHHMP----FG
 Cobra --QQLQQQQPQ-----GFPPYSQPPWHFPQI--
 FGPRGFQPKHYGSYQGHIP----FG
 Pantherophis -----QQQPQ-----GFPPYSQPPWHFPQI--
 FGPRGFQPQQYGSYQGHMP----FG
 Pogona -----DLQSK-----AFLPHQQQPWHFPQVM-
 FGHGGFQPQMFGPYQGRTPGLRPLG

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Allig_mississip
 QPPISNEEGGNPYGYFFQGLGQRPPYYSEEMFEHEYDKPKPEKEAPKEESPAAAPVPNA
 Allig_sinensis
 QPPISNEEGGNPYGYFFQGLGQRPPYYSEEMFEHEYDKPKPEKEAPKEESPAAAPVPNA
 Gharial
 QPPISNEEGGNPYGYFFQGLGQRPPYYSEEMFEHEYDKPKPEKEAPKEESPAAAPVPNA
 Crocodilus_nilo
 QPPISNEEGGNPYGYFFQGLGQRPPYYSEEMFEHEYDKPKPEKEAPKEESPAAAPVPNA
 Crocodilus_poro
 QPPISNEEGGNPYGYFFQGLGQRPPYYSEEMFEHEYDKPKPEKEAPKEESPAAAPVPNA
 Aspidoscelis RPPVSNEE-GTPYFGYGFHGLGGRPPYYSEEMFEQDFEKP-
 EKDP-----PAPDPATNS
 Shinisaurus RPPVSTEE-GTPHYGYGFQGMGRPPYYSEEMFEQDFEEAK-

EKEAPK----ATDPATNS
 Ophisaurus RPPAS-EE-GTPYFGYGYQG---RPPYYSEEMYEQDFEKKP-
 EKEPPK----TTDPPTNS
 Anolis RPPNS-EE-GNPYFGPGYQGMGRPPYYSEEMFEQE-----
 DKEAPK-ESPATDPVTNS
 Eublepharis HPPISNEE-GTPYYGYGYHGLGNRRPYNSEE-FENDYEKKP-
 EKEAPKTESPATDPATNA
 MournGekko RPPISNEE-GTPYYGYGYPLGVR-PYNSEE-FEQDYEKKP-
 EKEAPNTESPAADPATNA
 Gekko_japon RPPISNEE-GTPYYGYGYPLGVR-PYNSEE-FEQDYEKKP-
 EKEAPNTESPAADPATNA
 Python RPPISNEE-GTPYFGYGYHGLGNRLPYYSEEMFEQDFEKKP-
 EKDSPK-ENPAADPITNS
 Boa_constrictor RPPVSNEE-GTPYFGYGYHGLGNRPPYYSEEMFEQDFEKKP-
 EKDPPK-ENPAADPTMNS
 Vipera QPPVSNEE-GTPYFGYGYHGLGNRPPYYSEEMFEQDFEKKP-
 EKEPPK-ENPASDPTTNS
 Protobothrops QPPVSNEE-GTPYFGYGYHGLGNRPPYYSEEMYEQDFEKKP-
 EKEPPK-ENPASDPTTNS
 Croc_horrid QPPVSNEE-GTPYFGYGYHGLGNRPPYYSEEMYEQDFEKKP-
 EKEPPK-ENPASDPTTNS
 Croc_mitch QPPVSNEE-GTPYFGYGYHGLGNRPPYYSEEMYEQDFEKKP-
 EKEPPK-ENPASDPTTNS
 Thamnophis QPPVSNEE-GTPYFGYGYHGLGNRSPYYSEEMFEQDFEKKP-
 EKEPAK-ENPASDPTTNS
 Cobra QPPVSNEE-GTPYFGYGYHGLGNRPPYYSEEMFEQDFEKKP-
 EKEPPK-EKPASDPTTNS
 Pantherophis QPPVSNEE-GTPYFGYGYHGLGNRPPYYSEEMFEQDFEKKP-
 EKEPPK-ENPASDPTTNS
 Pogona RPHVSNEE-GAPYFGYGYHGMGHRPP-YSEEMFEQDFEPPV-
 EKEPAK-ETPATNPVTNS

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Allig_mississip
 TVPVVSTTTTPSPPSQGGDQGGNATHPGVSAGENGTPSQNPENKPAGVNET-TPSPTVNIS
 Allig_sinensis
 TVPVVSTTTTPSPPSQGGDQGGNATHPGVSAGGNGTPSQNPENKPAGVNET-TPSPTVNIS
 Gharial
 TVPVVSTTTTPSPPSQGGDQGGNASHPGVSAAGSGTPSQNSENKPAVENGT-TPSPTVNIS
 Crocodilus_nilo
 TVPVVSTTTTPSPPSQGGDRGGNATHPGVSAGGSGTPSQNPENKPAVENGT-TPSPTVNIS
 Crocodilus_poro
 TVPVVSTTTTPSPPSQGGDRGGNATHPGVSAGGSGTPSQNPENKPAVENGT-TPSPTVNIS
 Aspidoscelis TVSDTNSTLSNPPS----QGENATLSGLSTS--
 GANSPVLEGKSIGG---PTLSPTDYVS
 Shinisaurus TVSDTNSTISNPAN----

QGGNATISGLSSTNSGANSPLDQSKLVSGNGVPTPSPTVLIS
 Ophisaurus TVSDTNSTISNPAS----
 QGGNATISGLSTMNGANSPLQSKLLSGNGVPTPSPSVLMS
 Anolis T--DTNSTVSNPAS----
 QGGNGTMSGLSEKATGANSPGLQNNMFSGNAVSTSSPTTQTS
 Eublepharis T--DTNSTLSNPAG----
 QVGNATNAGLSITDNGGNSPKLESRWHIGNGVPTLLPTLHVS
 MournGekko T--DTNSTLSNPSS----
 QAGNATNSGLSVTDSGANSPLNLESRLIVNGVPTISPTLHVS
 Gekko_japon T--DTNSTLSNPSS----
 QAGNATNSGLSVTDSGANSPLNLESRLIVNGVPTISPTLHVS
 Python TVSDTNSTI--PAS----
 HGGNATLSGLSPTNNEANFLGVPNKFVSRNGIPTPSPTGRIS
 Boa_constrictor TVSDTNSTI--PAS----
 HGGNATLSGLSTTNNEANFLGVPNKFANGNGIPTPSPADHIS
 Vipera TVSDTNSTI--PAS----HGGNASLSGLSTTNNEANF-----
 VHVNGIPTPSPTGHMS
 Protobothrops TASDTNSTI--PAS----HGGNANLSGLSTTNNEANF-----
 VHNGIPTPSPTGHMS
 Crota_horrid TASDTNSTI--PAS----HGGNANLSGLSTTNNEANF-----
 VHNGIPTLSPTGHMS
 Crota_mitch TASDTNSTI--PAS----HGGNANLSGLSTTNNEANF-----
 VHNGIPTPSPTGHRS
 Thamnophis TVSDTNSTI--PAS----
 HGGNATFSGLSTTNNEANFPGLSKKIVSGNGIPTPSPTGHMS
 Cobra TVSDTNSTI--PAS----
 HRENATLSGISTTNNEANFPGLSKKIVSGNGIPTPSPTSHMS
 Pantherophis TVSDTNSTI--AAS----
 NGGNATLSGLSTTNNEANFPGLSKTIVSGNGIPTPSPTGHVS
 Pogona TVADTNTTVSNPAS----
 QGGNATISEPIATGNGANPLGLQSKLVDGNGFSTPSPTAHVS
 * ..:* *.. .
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Allig_mississip SPQEPGSEGVPQNGPEQPNARRNAPTLD-
 IIQRF PANRQQMFGHGSFGHREYSQGYRSSL
 Allig_sinensis SPQEPGSEGVPQNGPEQPNARRNAPTLD-
 IIQRF PANRQQMFGHGSFGRREYSEGYRSSL
 Gharial SPQQPGSEGVPQNGSEQPNAGRNTPTLD-
 IIQRF PANRQQMFGHGSFGRREYSQGYRSSL
 Crocodilus_nilo SPQEPGNEGVPQNGPEQPNAGRNTPTLD-
 IIQRF PANRQQMFGHGSFGHREYSQGYRSSL
 Crocodilus_poro SPQEPGNEGVPQNGPEQPNAGRSTPTLD-
 IIQRF PANRQQMFGHGSFGHREYSQGYRSSL
 Aspidoscelis -----GVNAIAQNGNNQSSLRPNSPSMN-
 AIQNFPPDAQQSAGHGSN-----IYNLHP
 Shinisaurus -----GGNGAAQNGIDQSSHRPQFPNVN-

GVQSFPSGSQQSTGHGSH-----VYKPHP
 Ophisaurus -----GANGAAQNGIDQSSHRPKSSTVN-
 GIQSFPSGSQQPTGHGSH-----DYKPHP
 Anolis -----EGNGVAQNVLEQIRHRKLPNGD-
 VIQSFPSGRQHSTMQVSN-----IHKPHE
 Eublepharis -----
 NGDTAAQNGMDQSVHRASSPNIYHIVQNLPDQHQSTGNGLP-----VYKHYP
 MournGekko -----
 KGDVAAQNVMDQSIHRASSPNSNHI IQNLPSDKQQSTGNGLH-----VYKPYP
 Gekko_japon -----
 KGDVAAQNVMDQSIHRASSPNSNHI IQNLPSDKQQSTGNGLH-----VYKPYP
 Python -----GQNEVAQNGIDQLSYRPKPTNAN-
 VFHNIFSDGQQSRGHSSY-----IYKANP
 Boa_constrictor -----AQNEAGQNGIDQSNYKPKSTNAN-
 VFHNLFSGSQQSRGRSSY-----IYKPNT
 Vipera -----GQNEAAQNGIDQSNYRPKSTNTN-
 VFHNFFSGSQQSRGRDSY-----IYKANP
 Protobothrops -----GQNEAAQNGIDQSNYRPKSTNTN-
 VFHNFFPGSQQSRGRDSY-----IYKPNS
 Crota_horrid -----GQNEAAQNGIDQSNYRPKSTDNTN-
 VFHNFFSGSQQSRGRESY-----IYKPNS
 Crota_mitch -----GQNEAAQNGIDQSNYRPKSTDNTN-
 VFHNLFSGSQQSRGRDSY-----IYKPNS
 Thamnophis -----GQNDVQNGFDQSNYRPKSTNTN-
 VFRNFFSGSQQSRGHGSD-----IYKPNP
 Cobra -----GQNEAAQNGFDQSNYRPKSTNTN-
 VFHNFFSGSQQPRGRGTY-----IYKPNP
 Pantherophis -----GQNEASQNGFDQSNYRPKSTNTN-
 VFHNFFSGSQQSRGRGSY-----IYKPNP
 Pogona -----GGNGAAQDALEQSGHQPKSPN---
 MIQSFPPASQQSTGHVPH-----IYNPHS

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Allig_mississip
 DQGAARHRASASMVPSTPSENSLYRKGPPDNSPIQTNRGDLQSRPS--NYPALNPRHG
 Allig_sinensis
 DQGAARHRAYASMVPSTPSENSLYRKGPPDNSPIQTNRGDLQSRPS--NYPALNPRHG
 Gharial
 DQGAARNRASAFMVPSTPSENSLYRKGPPDNSLIQANRRGNLQSKPS--NYPALNPRHG
 Crocodilus_nilo
 DQGAARHRASAFMVPSTPSENSLYRKGPPDKSLIQANRRGNLQSKPS--NYPALNPRHG
 Crocodilus_poro
 DQGAARHRASAFMVPSTPSENSLYRKGPPDKSLIQANRRGNLQSKPS--NYPALNPKHG
 Aspidoscelis DMREPRHNAMISRGNFPIRTENPNYVSAYGETI----
 NHREGPQNANS--NYPSISNRPE
 Shinisaurus DMGDTRHNTLISGGNPSIQTENPTYPLGYGEDS----

NHRGNLHNTNI--NHPSTGTEPI
 Ophisaurus DMGDMRHNTLVSRGNPSVQSENPTYPFGYAENS----
 IHRGNLQNTNI--NHPSTVSGPN
 Anolis HMENTKQN-LISRGNPSIQSEDPTYPMGNGWNS----
 NHRGNIQNTNV--NNPSTNTRHI
 Eublepharis GMENSRPNTYISNGNPSGHPETPTYPSGYGDNS----
 NQRGNLQINNNNNIP-INTRPN
 MournGekko GMDESRHNTYISRGNPSGHPENPTYPSGYGESS----
 NQRGNLQDINSNNNNPSINARPN
 Gekko_japon GMDESRHNTYISRGNPSGHPENPTYPSGYGESS----
 NQRGNLQDINSNNNNPSINARPN
 Python DMSNTRHNTLVSRGNPSIQAENPTEPWVYGGNS----
 IHRDNLQRINS--NHPTVNNRPN
 Boa_constrictor DMGNTRHNTLVSRGNPSIQAENPTEPWVYGDNS----
 IHRDNLQRINS--NHATANNRPN
 Vipera DMGNTRYNTLVSRGNPSIQAENPADPWVYRDNS----
 VHRDNLQRINS--NHPTAKNRPN
 Protobothrops DMGNTRHNTLVSRGNPSIQAENPADPWVYRDNS----
 VHRDNLQRINS--NHPTAKNRPN
 Croc_horrid DMGNIRHNTLVSRGNPSIQAENPADPWVYRDNS----
 VHRDNLQRMNS--NHPTAKNRPN
 Croc_mitch DMGNTRHNTLVSRGNPSIQAENPADPWVYRDNS----
 VHRDNLQRINS--NHPTAKNRPN
 Thamnophis DMGNSRHDTLISRGNPSMQAENPEEPWVYRDNL----
 VHRANLQRINS--NHPTAKNRPN
 Cobra DISNSRHNTLVSRGNPSMQAENPKEPWVYRDNS----
 VHRANLQRINS--NHPTAKNRPN
 Pantherophis DMGNSRHNTLVSRGNPSMQAENPEDPWIYRDNS----
 VHRANLQRINRELNYPKAKNRPN
 Pogona EMGDARHNTLTFRGNPSIQAENPSRSFGYRDNL----
 DPRGNLQSTNS--NQAMANPRPI

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Allig_mississip PSGSEFQQ--
 HGKRAAGQRQRPPFPDTHPLSQRQONAPSYSNNRAGYKKGIIILPDSKP-PA
 Allig_sinensis PSGPEFQQ--
 HGKRAAGQRQRPPFPDTHPLSQRQONAPSYSNNRAGYKQGIILPDSKP-PA
 Gharial PSGPELQQ--
 PGKRPAGQRQRPHFPDTHPLSQWQONAPSYSNNRAGYKQGIILPDSKP-PA
 Crocodilus_nilo PSGPEFQQ--
 PGKRPAGQRQRPHFPDTHPLNQWQONAPSYSNNRAGYKQGTILPDSKP-LA
 Crocodilus_poro PSGPEFQQ--
 PGKRPAGQRQRPHFPDTRPLNQWQONAPSYSNNRAGYKQGTILPDSKP-LA
 Aspidoscelis
 PYGYQKQTRFHKINLPGQKEGMPFPSSDLKNQWIKDPVYRDNGLHNPP----PEGHS-LD
 Shinisaurus

PYGQQEQPHYSGRNPLGQREREPFPRSDPPGQWNKDP IYRDNSLNGSP----PEGHS-LD
 Ophisaurus
 PYGQQEHPHYSGRNSLGQRERGFPPSSNPLGQWNKDPVYRDNSLNSSP----PEGHS-LD
 Anolis
 PYGQQEQPHYPERNEFSQIDSVPFPSSDPVGQWNKDP IYRDNDPKNSP----PEGHP-LD
 Eublepharis
 PYGQQEHPHYPERNPSNQRQILFPSSDPQSQWNKDPVYRDNNLNSFP----PEGHS-MD
 MournGekko
 LYGQQEHPHYPERNPSDQRQILFPSSDPQSQWNNDPVYRDNSLNSFP----PEGTSGVD
 Gekko_japon
 LYGQQEHPHYPERNPSDQRQILFPSSDPQSQWNNDPVYRDNSLNSFP----PEGTSGVD
 Python SYGQQEELRYPGNNPSRWR-----
 PSSGRGPQWSKNPAHGDNKQPSSP----SESHS-L-
 Boa_constrictor SYGQQEELHYPGNNPSSWRA---
 NPSSGPGPQWNSNLAYRDNKQPSSP----SESHS-L-
 Vipera TFGQQEKSHYPGNNPSSWRA---
 DPNSGPGPQWNKNPTYGGNKQPSSP----LESHS-L-
 Protobothrops TFGQQEKSHYPGNNPSSWRA---
 DPSSGPGPQWNKIPTYGGNKQPSSP----LESHS-L-
 Croc_horrid TFGQQEKSHYPGNNPSSWRA---
 DPSSGPGPQWNKIPTYGGNKQPSSP----LESHS-L-
 Croc_mitch TFGQQEKSHYPGNNPSSWRA---
 DPSSGPGPQWNKIPTYGGNKQPSSP----LQSHS-L-
 Thamnophis SYGQQEKVHYPGNNPSSWRA---
 HPSSDPGPQWNKNPAYGRHKQPSSP----PESHs-L-
 Cobra SYGEQEKFHYPGNNPSSWRA---
 HPSSDPGPQWNKNPAYGGNKQPSSP----SESHS-V-
 Pantherophis SYGQEEKFHYPENNPSSWRA---
 HPSSDPGSQWNRNPAYGDNKQPSSP----PEGHS-L-
 Pogona
 SYGPQEQSHLPGRSPSGQREIMPIPTSDPPSRWNKDPVYRDNYLHNSP----PEGHS-VD

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Allig_mississip
 PTFNTVGTNEHTQHSQDDASRIPASGLQLTSQATPKGVFLDARRHPSTPEASQRDWEKQA
 Allig_sinensis
 PTFNTIGTNERTQHPQDDASRIPASGLQLTSQATPKGVFLDARRHPSTPEASQRDWEKQA
 Gharial
 PTFNTIGTNEHTHHPQEDANRIPASGLQLTSQPTPKGVFLDARRHPSTPETSQRDWEKQA
 Crocodilus_nilo
 PTFNTIGTNEHTHHPQEDANKIPASGLQLTSQPTPKGVFLDAKRHPSTPEASQODWEKQA
 Crocodilus_poro
 PTFNTIGTNEHTHHPQEDANRIPASGLQLTSQPTPKGVFLDARRHPSTPEASQODWEKQA
 Aspidoscelis P---
 PLRETENVFNAKENIDPSKPSRMHQSNTRSHWDTFSATSMTPFETATNQHTWKERF
 Shinisaurus

PQFNTLERAENVYNAREGFDRFQPSGMHQSSTFSHRGVFSATSRTPLETETHQYDRKEQS
Ophisaurus
PQFNTLGRPENAYNAREEFDRFQPSGMHRSNTLSHOGVFSATRRTPFETEAHQYDWKEQS
Anolis PQFKTM-
RIDNIYNARQDAERFQPSGMHQSNALSHQGVNLABRRTPFIEIETHQYDWREQP
Eublepharis
PQFNTLQAENSYNTRKETDLFQPSGVHQLSSLSPOGVFSPTKRTLSEAETHQYPWKEQV
MournGekko
AQFNTLQAENSYNIRKDTDQFQPSGMHQLSSLPQGVFLPTKRTLSEAETSQYHWKEQG
Gekko_japon
AQFNTLQAENSYNIRKDTDQFQPSGMHQLSSLPQGVFLPTKRTLSEAETSQYHWKEQG
Python -----
YQVEEKTGMYPQSRMQQSNGLSHQEIVLDTRGTPFETETHKNDWKEPS
Boa_constrictor -----
YKVEENTDMYHPSRMQQSNGLSHQEIFLDTKGTPFETETHKNDWKEQS
Vipera -----
KKVEENSMDYHPSRKQQSNGQFHQETFLDTRGIPFEKKAHKNDWKEQS
Protobothrops -----
KKVEENSMDYHPSRKQQSNGQFHQETFLDTRGIPFEKEAHKNDWKEPS
Crot_horrid -----
KKVEENSMDYHPSRKQQSNGQFHQETFLDTRGIPFEKEAHKNDWKEPS
Crot_mitch -----
KKVEENSMDYHPSRKQQSNSQFHQETFLDTRGIPFEKEAHKNDWKEPS
Thamnophis -----
NKVEENSMDYHPSRKQQSNGQSHPEIFSDTRGTPFEKEAHKNDWDEQS
Cobra -----
NKLEENTDRYHPSRKQQSNGQSHHDIFLDTRGTPFEKEAHKNDWNEQS
Pantherophis -----
NKVEENTDRYHPSRKQQTNSQSHQDLFSDTRGTPFEKEA-----
Pogona PQINTLR-----
RPSGMQQPNILSEQEIFPSTKRTPFETETHWYDWKQQL

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Allig_mississip VNPSYPEREHFPLSGSKMWRHQONSPPF-
EAGLHESSTYPPGALFGQGRS-VSYPEYNS-
Allig_sinensis VNPSYPEREHFPLSGRKTWRHQONSPPF-
EAGQHESSTYPPGALFGQGRS-VSYPEYNS-
Gharial VNPSYPEREHFPLSGSKTWRHQONSPPF-
EAGQHESSTYPPGALFGQGRS-VSYPEYNS-
Crocodilus_nilo VNPSYPEREHFPLSGSKMWRHQONSPPF-
EAGQRESSTYPPGALFGQGRS-VSYPEYNS-
Crocodilus_poro VNPSYPEREHFPLSGSKTWRHQONSPPF-
EAGQRESSTYPPGALFGQGRS-VSYPEYNS-
Aspidoscelis FIPPDHERELYSPPQKQIWRNQEDSRVFRSPSRYSIFSTGS-
FHQKGH-ATYSEKNS-
Shinisaurus FNHPYHEREQFPSSQNHMWKNQEDPOGFQEVPPRYNSIYSSGS-

LNHRGH-ATYTEKNS-
 Ophisaurus FNHPDREREQFPSSQNHMWNNQEDSRGFREVPPRYNTMYSSGS-
 LNRRGH-AAYAENNS-
 Anolis FNHIDQKRGQFLSAQTPTWNNREASQLFQEAPPRQSSMYSSGS-
 FNQREM-PTYSGKKS-
 Eublepharis FNPPVYKREQFSPQONQEWNKQEELQVFQDDPPRYNSRHSSGY-
 FGQRSNRISYPEKSS-
 MournGekko FNSPVHEREQFLSPRNHVWNKQEDLQVFQDDPPRYNSRHSSGY-
 FGQER-LSYPEKSS-
 Gekko_japon FNSPVHEREQFLSPRNHVWNKQEDLQVFQDDPPRYNSRHSSGY-
 FGQER-LSYPEKSS-
 Python FIHPDHQREQFPSSQNQMWN-QKDLEIVQEVPYGYNSVTSSGS-
 FHQRGH-DTYADKNF-
 Boa_constrictor FIYDPHQREQLPSLQNMWNCN-QKKLEVVEAPPYNSVYSLGS-
 FHQQGH-TTYADKNS-
 Vipera FIHPDHQREQFPSLQNMWNCN-QKDLAMVKEAPPYNSVYPPGS-
 FHQREH-ATYSDKTF-
 Protobothrops FIHPDHQREQFPSLQNMWNCN-QKDLEMVKEAPPYNSVYSPDS-
 FHQRGH-ATYSDKNF-
 Croc_horrid FIHPDHQREQFPSLQNMWNCN-QKDLEMVKEAPPYNSVYSPDS-
 FHQREH-ATYSDKNF-
 Croc_mitch FIHPDHQREQFPSLQNMWNCN-QKDLEMVKEAPPYNSVYSPDS-
 FHQREH-ATYSDKNF-
 Thamnophis FIHMDHQKGFPSLQNMWNCN-QKNLEIVKETPPYNSAYSPPGS-
 FHQRGH-ATYSDKNS-
 Cobra FIHPDNQREQFPSLQNMWNCN-QKDLEIVKETPPYNSAYSPPGS-
 FHQREH-ATYSDKNS-
 Pantherophis FIHPDHQREQFPSLQNMWNCN-QKDLEVVEAPPYNSAYSPPGS-
 FHQRGR-ATYSDKNS-
 Pogona PNPPDRERERFPSAQNMWSSRENSQIFQDAPPYNSMYSLDS-
 IHQRGQ-EIYSERNSE

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Allig_mississip ---FNQKGIPHFSQGSWE---NSP-VSPAGQRGNPLYPL--
 DSSQREGGPHYENDPFDQ
 Allig_sinensis ---FNQKGIPHFSQGSWE---NSP-VSPAGQRGNPLYPL--
 DSSQREGGPHYENDPFDQ
 Gharial ---FNQKGIPHFSQDSWE---NSP-VSPAGQRGSHLYPP--
 DASQREGNPHYENDPFDQ
 Crocodilus_nilo ---FNQKGIPHFSQDSWE---NSP-VSPEGQRGNSLYPP--
 DASQREGNPHYENDPFDQ
 Crocodilus_poro ---FNQKGIPHFSQDSWE---NSP-VSPEGQRGNSLYPP--
 DASQREGNPHYENDPFDQ
 Aspidoscelis ---YGQRSQSFYP--
 SPWEDRESSPTVGPADQRERHSYSPPLTSDQMQRNIYHRD---IP
 Shinisaurus ---YGQHTHSFFP--

RAWEDGENSPTMGPPVQRESPSYSPALPSNQMQRNTYQRS---AQ
Ophisaurus ---YGQHTQSLSP--
STWEDRESSPTLGSQVQRESPSYSPALPSNQMQRNTYQRN---MQ
Anolis ---YNQYTHPFPP--
RAWEDREHSPTISPSDQRESSPYPPVSPSDQIQRNTYYRR---IQ
Eublepharis ---YDQPPRSFYP--ETWEGRENSPTLGPAGQKERPFYSP-----
QMQRNSYRRSDPVVQ
MournGekko ---YAQPPRSFYP--
DTWEGRESSPTLGPAGQREHPLYSSAVPSNQVQXXXXXXXX---XX
Gekko_japon ---YAQPPRSFYP--
DTWEGRESSPTLGPAGQREHPLYSSAVPSNQVQXXXXXXXX---XX
Python ---YSQQTSPSFYP--
RAWEDKENLPTIQPLGQRERPYNPILPSNQMHRSNYHGS---IQ
Boa_constrictor ---YSQQTSPSFYP--
RAWEDKENLPTTEPLGQRERPFYSPVLPSPDVHRSTYHGN---IQ
Vipera ---YSQQAPSFYP--RAWDDKENLPTIEPLGQ--
RGSYSPLLPSDQMHRSEYHGS---IQ
Protobothrops ---YSQQAPSFYP--RAWDDKENLPTIEPLGQ--
RGSYSPLLPSDQMHRSEYHGS---IQ
Crot_horrid ---YSQQAPSFYP--RAWDDKQNLPTTEPLGQ--
RGSYSPLLPSDQMHRSEYHGS---IQ
Crot_mitch ---YSQQAPSFYP--RAWDDKQNLPTTEPLGQ--
RGSYSPLLPSDQMHRNEYHGS---IQ
Thamnophis ---YREEAPSFHP--
RFWDDKENLPTVEPLGQRERPSYSPLLPSDQMHRSEYHES---IQ
Cobra ---YRQQAPSFYP--
RFWVDKENFPTIEHLGQRERPSYSPLLPSDQMHRSEYHGS---IQ
Pantherophis ---YRQQAPSFHP--
RFWEDEENLPTIEPPGQRERPSYSPLSPSYQMHRSEYHGS---IQ
Pogona RNPYQQNGHPSTS--
RTWEERKDSPVTGSTGQRERLSYSPILPSNQMQKNHYHRS---VQ

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Allig_mississip LGPDSY-
PGQRTWDQEQLPEAEGSPAGQYGNPQYLPSNPAEQEVYFQYSKDQ-----GR
Allig_sinensis LGPDSY-
PGQRTWDQEQLPEAEGSPAGQYGNPQYLPSNPAEQEVYFQYSKDQ-----GR
Gharial LGPDSY-
PRQRIWDQEQLPEAEGSPAGQYGNPQYPPNPAEQEVYFQYSKDQ-----GR
Crocodilus_nilo LRPDSY-
PRQRTWDQEQLPEAEGSPAGQYGNPQYPPSNPAEQEVYFQYSKDQ-----GR
Crocodilus_poro LRPDSY-
PRQRTWDQEQLPEAEGSPAGQYGNPQYPPSNPAEQEVYFQYSKDQ-----GR
Aspidoscelis LQHELY-HKQHPWTDEKQLLDLD----RQYRNDPY---
SPTQHMYPKYSIENPFS-QRS
Shinisaurus QEHEPY-ARQNLRTHEHLLDLD----KQYRNPSY---
NPSQHHAYPKYSTENPSN-DRG

Ophisaurus NLPYEGINQWTPEERPPVHSIEPLRRTENFPYRMSNVFGPR-----
 ERNLQSQRSSSP
 Anolis NLPYRKINQWTQEEHSPVHTAGHLRQMENVPYRTNSKFEQG-----
 ERKFQNVGSGSP
 Eublepharis NVPYKEIHPWIPEEHSPPYTAEYLWQTEGIPDRKSNAFGHP-----
 ERTYQNEGANSP
 MournGekko NAPYTEINPWIPEEHSPPYAAEHLRQTENIPYRRNNEFGHR-----
 ERNFPNEGANSP
 Gekko_japon NAPYTEINPWIPEEHSPPYAAEHLRQTENIPYRRNNEFGHR-----
 ERNFPNEGANSP
 Python NLPYEEINRRIP-EHSPVGGSEH---YENIPYHISNTFGHT-----
 ERNLPYQGLYSP
 Boa_constrictor NLPYEEINRQIP-EHSPVRGPEH---YENVPYHISNTFGHI-----
 ERNLPHQGPYSP
 Vipera NLPYEEINRQIP-EHSPVHGSEH---YEHIPYHISNIHGHT-----
 ERNLPPYGPYPA
 Protobothrops NLPYEEINRQIP-EHSPVHGSEH---YEHIPYHISNTHGHT-----
 ERNLPPYGPYPP
 Croc_horrid NLPYEEINRQIP-EHSPVHGSEH---YEHIPYHISNTHGHT-----
 ERNLPPYGPYPP
 Croc_mitch NLPYEEINRQIP-EHSPVRGSEH---YEHIPYHISNTHGHT-----
 ERNLPPYGPYPP
 Thamnophis NLPYEEINRRI-----PVHGPEH---YENVPYHISNTHGQI-----
 GRNPPYP-PYPP
 Cobra NLPYEEINRWIP-EHSPVHGSEH---YENVPYHISNTHGPP-----
 EKNLPPYGPYPP
 Pantherophis NLPYEEINRRIP-EHSPVHGSEH---YENVPYHISNTHGHT-----
 ERNPRYPGPYPP
 Pogona NLPYERMNQWTPEKHIFIPVTEHLKPVENIPYHTNGMFGQK-----
 DQNMGNQGSNSP

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Allig_mississip PH-----PGRSQFLT-RSPRDPE-
 MGSPVQTERTPHSGY-----
 Allig_sinensis PH-----PGTSQFLT-RSPRDPE-
 MGSPAQTERNPHSGY-----
 Gharial PQ-----PGRSQFLT-RSPRDPE-
 MGSPAQTERTPYSGY-----
 Crocodilus_nilo PH-----PGRSQFLT-RSPRDPE-
 VGSPAQTERTPYSGY-----
 Crocodilus_poro PH-----PGRSQFLT-RSPQDPE-
 VGSPAQTERTPYSGY-----
 Aspidoscelis LQRITQVPVRTQYTE-
 RDTWAPKRVGSSVQEEPSPYFNAYQKHFRRNP-TVSEGRKEVIP
 Shinisaurus
 LQSTLLQGGPQYAEKRNTWVPQMGSSAQKDTSPYYNTYSTDFRRNP-TYTEDTGGAIH

Ophisaurus LQSATFHQGGPQYIE-
 RDTWVPPRVASSTQKDTPPYNGYSTDFRRNP-TYSEDTGDAIH
 Anolis QQRNT-FQEEAQYAE-
 RNTWVPQRVDPSAQKETAPYNYIYSTDFRGNP-THVEDRERIIH
 Eublepharis SQGPTLVQRPQYSE-
 RDTWGPFRMGPSVQKEASPYFNSYPPDFRRNP-THMEDTR----
 MournGekko PQSTTLLQGGSRYPE-
 RDTWSPHRMGPSIQKEASPYFNSYSPDSRRNP-THMEDAG----
 Gekko_japon PQSTTLLQGGSRYPE-
 RDTWSPHRMGPSIQKEASPYFNSYSPDSRRNP-THMEDAG----
 Python PQSSNLFQGRSHYDE-
 RDTWAPQKVDQVAPKETSPYFNTYSTNFRRNP-TRTEDAWRAIH
 Boa_constrictor PQSSKLFQGRSHHDE-
 RNTWTPEIVDPAALKETSSYFNTYSTNFRRNP-TQIEDTWK-IH
 Vipera PKTSHLFQGRSPYDE-
 RDTWGPKLADPSAPKETSSYFNPYSTNIRRIP-THTEDTWRTIH
 Protobothrops PQTSNLFQGRSPYDE-
 RDTWAPKVADPSAPKETSSYFNPYSTNIRRNP-THTEDTWRTIH
 Croc_horrid PQTSNLFQGRSPYDE-
 RDTWAPKVADPSAPKETSSYFNPYSTNIRRNP-THTEDTWRTIH
 Croc_mitch PQTSNLFQGRSPYDE-
 RDTWAPKVADPSAPKETSSYFNPYSTNIRRNP-THTEDTWRTIH
 Thamnophis PQTSNLFQGRSPYDE-
 RDRWAPKVADTSAPKETSSYFNTYSSNIRRNP-TYTEDTWRAIH
 Cobra PQTSNIFQGRSPYDE-
 RDTWATKVADPSTLKETSSYFNTYSSNIRRNP-TYTEDTWRAVH
 Pantherophis SQTSNLFQGRSPYDE-
 RDTWAPKVADSSAPKETSSYFNTHSSNIRRNP-TYTEDTWKAIH
 Pogona PQSISLSQRGAQYAE-
 RSTWVPPILGPSPQKETSPYFNAYSTDLRKSDDDIDDTGKITH

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Allig_mississip -----
 PPNFRGITAFPSSSRLCCAGNSPVPKEDPLASLD
 Allig_sinensis -----
 PPNFRGITAFPSSSHLCCAGNSPVPKEDPLASLD
 Gharial -----
 PPNFRGITAFPSSSRLCCAGNSPVPKEDPLASLD
 Crocodilus_nilo -----
 PPNFRGITAFPSSSRLCCAGSSPAPKEDPLASLD
 Crocodilus_poro -----
 PPNFRGITAFPSSSRLCCAGSSPAPKEDPLASLD
 Aspidoscelis GSVPF---
 NDAEGRSYVNPLGYPDDYPPEHRIMTSQSTNTRLCCSGNSPGPRENILAPLR
 Shinisaurus
 VSAPISNVNVAGRRRYPDTLGYRDDYPREHRTIISHPTANHLCCAGDSPVPRENILAPLR
 Ophisaurus

ARAPISSVNI V G R R R Y P D T V D Y P D D Y P R E H R T I I S P P S E N H L C C A G D S P G P R E N M P A P L R
 Anolis
 M N A P I S T E N A P R R R H Y L D R M G Y S D D Y P K E R R M I T S Q S T A N Q L C C A D D S P M P R E N R L A P L R
 Eublepharis -
 S A P M S N A N V A E R S N Y R D T L G Y P D N Y P R E P R T I A S Y P T A D H L C C E G N A P V P Q E N V L A P L R
 MournGekko -
 G A H I S S V N T A E R R N Y P D R L G Y P D D Y P R E Q R T I T S Y P T A N R L C C A G D S S V P R G N S L A P L R
 Gekko_japon -
 G A H I S S V N T A E R R N Y P D R L G Y P D D Y P R E Q R T I T S Y P T A N R L C C A G D S S V P R G N S L A P L R
 Python
 M R A P I S S N N A P V R R N Y P N T G G Y P D D F P R E H E T I T S Q P T V N Y F C C A D E S R G A N E N I Q A P L K
 Boa_constrictor
 M S A P I S S D N A P G R R N Y P N T G G Y P D D Y P R E H E T I T S Q P T V N Y F H C T G E T P G A N E N I L A P L R
 Vipera IN P P I S S N N S P G R R N Y P N T G G ----
 Y P R E H E T I T S Q P T I N Y F C C A G E S L G A N E N I L A P L R
 Protobothrops I S A P I S S N N A P G R R N Y P N T G G ----
 Y P R E H E T I T S Q P T I N Y F C C A G E S L G A N E N I L A P L R
 Croc_horrid I S A P I S S N N A P G R R N Y P N T G G ----
 Y P R E H E T I T S Q P T I N Y F C C A G E S L G V N E N I L A P L R
 Croc_mitch I S A P I S S N N A P G R R N Y P N T G G ----
 Y P R E H E T I T S Q P T I N Y F C C A G E S L G V N E N I L A H L R
 Thamnophis I S A P F S S N N V P G R R N Y P N T G V ----
 Y P R E H E I I T S Q P T I N Y F C C T G E S P G A N E N I L A P L R
 Cobra I S A P I S S N N G P G R R N Y P N T G V ----
 Y P R E H E T I T S Q P T I N Y F C C A G E S P G G N Q N I L A P L R
 Pantherophis I S A P F S S N N A P E R R N Y P N T G V ----
 Y P R E H E A I T S Q P I I N Y F C C A G E S P G A K E N I L A P L R
 Pogona
 G S A P L S S V N V A G E R H Y P D T R R Y S E D Y R G E Y R T I T T H S T A D H L C C A E D S P V T K E G L P A P L R

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Allig_mississip Y-SLQLRPSTWEHKP----PE--
 GSHSKHARHVAYPAAIQSGQKNCSLRLEK---SPGEN
 Allig_sinensis Y-SLQLRPSTWEHKP----PE--
 GSHSKHARHVAYPAAIQSGQKNCSLRLEK---SPGEN
 Gharial Y-SLQLRPSTWEHKP----PE--
 GSHSKHARHVTPVAIHSGQKNCSLRLEK---SPEEN
 Crocodilus_nilo Y-SLQLRPSTWEHKP----PE--
 GSHSKHARHVTPAAIQSGQKNCSLRLEK---SPEEN
 Crocodilus_poro Y-SLQLRPSTWEHKP----PE--
 GSHSKHARHVTPAAIQSGQKNCSLRLEK---SPEEN
 Aspidoscelis S-APHFQLALWEQKGSSTYPE--
 VSHAKYARHAPHAGLQTSNRDNFLRTGEKNGNQGEK
 Shinisaurus SAAPQFRLASWEHKGSSTYPE--GSHAKHARHAPYLPSPITNH---
 SLKTGKMLPNQREH
 Ophisaurus SAAPHFRLASWEHKGSSTYPE--GSHAKHARHAPYPAGNQANH---

SLKTGKMOPNQREP
 Anolis S-APQFRHALWAAKESSTYPD--GSHANYVRHAHSPAGIQANN---
 PLKNGG---REQEE
 Eublepharis S-VPQFRQALWPQRGSSPYPEADGSHPKQAGHTLYPSGMQS-----
 SLKTEKSTPKQRED
 MournGekko S-ASQFRLASWEQRGSSLYPEAKGDHIKQASHILYPSGMQS-----
 SLKTDKSPPNQREN
 Gekko_japon S-ASQFRLASWEQRGSSLYPEAKGDHIKQASHILYPSGMQS-----
 SLKTDKSPPNQREN
 Python I-APQFRLASWQQKRSPTYPE--
 GSHASYARHPPYLAGIQSNHWNNLSLKFGLPNHREN
 Boa_constrictor T-APRFRLASWEQKGSPTYPE--
 GSHTLYARHPPYLAGVFNHWNNLSLKSGLPNHREN
 Vipera I-APQFRAVSWEQKSSPTYPE--
 GSHALYARRPAYLAGIQSNLWNNLSLKT-----NHREN
 Protobothrops I-APQFRAVSWEQKSSPTYPE--
 GSHALYARRPAYLAGIQSNIWNNLSLKS-----NQREN
 Crot_horrid I-APQFRAVSWEQKSSPTYPE--
 GSHALYARHPAYLAGIQSNLWNNLSLKS-----NHREH
 Crot_mitch I-APQFRAVSWEQKSSPTYPE--
 GSHALYARRPAYLAGIQSNLWNNLSLKS-----NHREH
 Thamnophis I-APQFKLVSWGQKNSPTYPE--
 GSHALYARRPAYLAGIQSNHWNNNSFNS-----NHKEN
 Cobra T-APQFKLVSWEQKSSPTYPE--
 GSHALYARHPAYLAGIQSNHWNNLSLKS-----NQREN
 Pantherophis I-APQFKLVSWEQKNSPIYPE--
 GSHALHARRPAYLAGIQSNHWNNLSLKS-----NHREY
 Pogona S-APQFRLAPWEEKISAGYSE--GSHGKHARHAPSPAGIQSNY---
 PFMVGK---KQKEN

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Allig_mississip AENFEDGTRDQERDMPCSKNALGQ-NKKQGSPKKGP-
 DPTRNPLYFESNTRGDGNSVFAQ
 Allig_sinensis AENFEDGTRDQERDMPCSKNALGQ-NKKQGSPKKGP-
 DPTRNPLYFESNTRGDGNSVFAQ
 Gharial AENFEDGTRDQERDMPCSKNVLGQ-NKKQGSPQKGP-
 DPTRNPLYFESNTRGDGNSVFAQ
 Crocodilus_nilo AENFEDGTQDQERDMPCSKNVLGQ-NKKQGSPQKGP-
 DPTRNPLYFESNTRGDGNSVFAQ
 Crocodilus_poro AENFEDGTQDQERDMPCSKNVLGQ-NKKQGSPQKGP-
 DPTRNPLYFESNTRGDGNSVFAQ
 Aspidoscelis IDTLGEKIAGVEKNLPCSKTQLNQQKEHEQINEAGL-
 PLSDDAPCSGSNIRGDRHNVLEG
 Shinisaurus LGAFGEEVADLEKSPPCSNPQLRQKNDHEADYETGL-
 PRPRNAPCYGSSTRGDGHNVLGW
 Ophisaurus LSAFREEAAVLEKSPPCSNPQLRQENDHEADYESGL-

PPQRKVPCYGSSIRGDGHNVLGR
 Anolis LGAFRVENAGSEKSLPCSNHLSQDSKQEANLQRL-
 FKFRNMPCHGSNIRGDRHNPLAH
 Eublepharis
 LGVFEKDAATLEKAPPCSRSQLSQONEREVNYETGLAAPTRKPPCYGRSVRGDGHSEFEW
 MournGekko LGVFGEDVAGLEKAPPCSKSQLGQENGHEVHHGNGL-
 APTRNTPCYGRSIRGDGHSILER
 Gekko_japon LGVFGEDVAGLEKAPPCSKSQLGQENGHEVHHGNGL-
 APTRNTPCYGRSIRGDGHSILER
 Python PGGFGEVADLEKSPPCSNSQLGQIRGHDTNYETGL-
 FPSKSILCSRNSIRGDGHTVLAH
 Boa_constrictor PGGFGEIADLEKPPCSKTQLGQVSDHDTTYETRL-
 FPSKNILCSRNSIRGDGHTVLAH
 Vipera PGGFEGEVADLGKSPPCSNLLAQTSDHDTIYETGL-
 FPSKSIPCSKTSIRGDGHTVLAD
 Protobothrops PGDFEEKVADLGKSPPCSNLLAQTSDHDTIYETGL-
 FPSKSILCSKNSIRGDGHTVLAH
 Croc_horrid PGDFEEVADLGKSPPCSNLLAQTSDHDTIHETGL-
 FPSKSILCSKNSIRGDGHTVLAH
 Croc_mitch PGDFEEVADLGKSPPCSNLLAQTSDHDTIHETGL-
 FPSKSILCSKNSIRGDGHTVLAH
 Thamnophis PDDFGEKVADLEMSPPCSNLLGQTS DHDTIYETGL-
 FSSKGILCSKNSIRGDGHTVLAH
 Cobra PGDFGEEVADLEMSPPCSNLLGQTS DHDTMYETGL-
 FPSKGILCSKNSIRGDGHSVLAH
 Pantherophis PGDFGEEVADLEMPPCSNLLGLTS--DTIYETGL-
 FPSKGIRCSKNSIRGDGHTVLAH
 Pogona LDTFTEEAAGAQNLPCKSKLSQDHTHETNCETGL-
 PPSENTHDYGNLSLRGDRHSIPAA

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Allig_mississip IFGLNQYNGRDAGPDPENHM-
 TGPHDIPEEEPLPEGIKSATLGSKVDMKE--VAHEFKRI
 Allig_sinensis IFGVNQYNGRDAGPDPENHM-
 TGPHAIPEEEPLPEGIRSATLGSKVDMKE--VAHEFKRI
 Gharial IFGVNQYNGRDTGDPENHM-
 AGPHDIPEEGTLPEGIRSATLGSKADMKE--VAHEFKRI
 Crocodilus_nilo IFGINQYNGRDAGPDPENHM-
 AGPHDIPEEGTLPEGIRSATLGSKADMKE--VAHEFKRI
 Crocodilus_poro IFGINQYNGRDAGPDPENHM-
 AGPHDIPEEGTLPEGIRSATLGSKADMKE--VAHEFKRI
 Aspidoscelis ILGSNQ-----
 SKREIERAASKMLVSEDVSAPQGIRSVSLDVKDDRRNEHTTHGFKRI
 Shinisaurus IVGANQ-----SKREFER-
 AALKLIPETFSPQOGIRSEALVSEVDRKEQHATLGFKRI
 Ophisaurus IVGTNH-----AKRELER-

APLKLIPETFPEPQGVRSALVSEVGGKEQQAELGFKRT
 Anolis LVGTGQ-----SFGR-
 GTLNFLPEQFPQPHGIQSEALVSEDDGKE-YAALGAKRI
 Eublepharis I---DP-----
 PKREQERAAPVNLIPKGGPPAQGIKSAALDTKGSRKQRPVAVFGFKRI
 MournGekko II---Q-----
 PKRDHERAAAVKFVPQKGGPPAHGIKSVAFDSEDSRKEQQAVLGFKRI
 Gekko_japon II---Q-----
 PKRDHERAAAVKFVPQKGGPPAHGIKSVAFDSEDSRKEQQAVLGFKRI
 Python IMGVNQ-----PKREFER-ASL-----
 RFPQPQGIRNEAIVGEIDRKEYHATHGFKRT
 Boa_constrictor IMGVNQ-----RKREFER-ATL-----
 RFPQPQGIRNDVAVGEIDRKEYHGHGTFERT
 Vipera IVEVNQ-----PKREFER-ATL-----TFPQPQGIRNEA-
 VGEIDRKEHRATQGFQGT
 Protobothrops IVEVNQ-----PKREFEK-ATL-----TFPQPQGIRNEA-
 IGEIDRKEHRATQGFQGT
 Croc_horrid IVEVNQ-----PKREFEK-AAL-----TFPQPQGIRNEA-
 IGEIDRKEHRATQGFQGT
 Croc_mitch IVEVNQ-----PKREFEK-AAL-----TFPQPQGIRNEA-
 IGEIDRKEHRATQGFQGT
 Thamnophis IVEVNQ-----PKREFER-ATV-----RFPQPQGIRNEA-
 VGEIDRKEHRATQGFQGT
 Cobra IVEVNQ-----PKREFER-ATL-----KFPQPQNIRNEA-
 VSDIDRKDHATQGFQGT
 Pantherophis IVEVNQ-----PKREFER-AAL-----RFPQPQGIRNEA-
 VSETDRKEHRATQGFQGT
 Pogona IMGESSE-----SRREFRQ-
 AAVKLVPEKSPEPQRIRSQALASEDGRKEQHAALAIKRI
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Allig_mississip
 PCFGSWLRQHLSSTGVPPGVRKQESIYGDQLLVIPTRKPNLQLETEAKIPSAEPPNGV--
 Allig_sinensis
 PCFGSWLRQHLSSTGVPPGVRKQESIYGDQLLVIPTRKPNLLLETEAKIPSAKPPNGV--
 Gharial
 PCFGSWLRQHLSSTGVPPGVRKQESVYGDQLPVIPTKPNLQLETEAKIPSAEPPNGV--
 Crocodilus_nilo
 PCFGTWRQHLSSTGVPPGVRKQESIYGDQLLVISTRKPNLQLETEAKIPSAEPPNGV--
 Crocodilus_poro
 PCFGTWRQHLSSTGVPPGVRKQESIYGDQLLVISTRKPNLQLETEAKIPSAEPPNGV--
 Aspidoscelis PCFGNWLKQYLPSTGAPSGDQNNLFNAES--
 PTPTGKLNIMPPEPQPISSSTPFHNTQE
 Shinisaurus
 PCFASWLKQYLSSTGAPPGDQQHDLF-----
 Ophisaurus PCFRSWLKQYLSSTGAPSGDQQHDLFYGED--

PVPTGKPDILHPEPQPISSTNPSHNVEE
 Anolis PCFGSWLKQYLSNTEVPSGDQQRDPFYGEN--
 PVPTERPNSIPPKEPISSSFLSNGVEE
 Eublepharis PCLGNQLQQYLSSTGAPSSGKQQDLFYAEN--
 PMLIGKSFIIILPEPHPLTSTNPSYDTEE
 MournGekko PCLLNRLKQFLSSTGAPSGDTQQDLFYAEN--
 PALIGQSYVILPEPHPLSSTDPSYDTEE
 Gekko_japon PCLLNRLKQFLSSTGAPSGDTQQDLFYAEN--
 PALIGQSYVILPEPHPLSSTDPSYDTEE
 Python PCFGSWLKQHISSTGTPLGDQPSGVFYAEH--SMHAGKPI-
 MLPEPQPISSTVPSHSIGE
 Boa_constrictor PCFGNWLKQHISSTGTPLGDQLSDVFYAEN--
 SMHAGKPIITMLPEPQPISSTVPSHDI-E
 Vipera PCFGSWLKQHIFSTGDPLVDQSSDIFYAEN--SMQAGKPI-
 MLPEPQPMTSTVLSQDVGE
 Protobothrops PCFGSWLKQHIFSTGDPLVDQSSDIFYAEN--SMQPGKPI-
 MLPEPQPMTSTVLAQDVGE
 Crota_horrid PCFGSWLKQHIFSTGDPLVDQSFDFIFYAEN--SMQAGKPI-
 MLPEPQPMTSTVLAQDVRE
 Crota_mitch PCFGSWLKQHIFSTGDPLVDQSSDIFYAEN--SMQAGKPI-
 MLPEPQPMTSTVLAQDVGE
 Thamnophis PCFGSWLKQHISSTGDPLVDQPSDIFYLEN--SMHAGKPI-
 MLPEPQPMSSTVPSQDGGE
 Cobra PCFGSWLKQHISSTRDPLVDQPSDVFYLEN--SMHAGKPI-
 MLPEPQPMSSTAPSQDVGE
 Pantherophis PCFGNWLKEHISSTGDPLVDQPSDVFYLEN--SMHAGKPI-
 MLPEPQPVSSTVPSQDGGE
 Pogona PCFASWLKQYLSSTGAPSGDQQHNLFHGET--
 PVPTSRPNDMPPESKPISSSTNPSHDDRE

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Allig_mississip -----SSLTGGMANDSEERRPDCLLLQN-
 Allig_sinensis -----SSLTGGMANDSEERRPDCLLLQN-
 Gharial -----SSLTGGMANDSEERRPDCLLLQN-
 Crocodilus_nilo -----SSLTGGMANDLEERRPDCLLLQN-
 Crocodilus_poro -----SSLTGGMANDSEERRPDCLLLQN-
 Aspidoscelis -NPVKSSSPGRELVQANESVPDCFLLQNK
 Shinisaurus -----
 Ophisaurus -NLLDFSSPGEELAEQPNEWIPDCLLLQNK
 Anolis -KPLKINAPEEEWAKLATQSTPDCLLLQKK
 Eublepharis -KPLTPSALGEDLADQPKERTPDCLLLQK-
 MournGekko -KPLTPSSLGEDLADQPNERTSDCLLLQK-
 Gekko_japon -KPLTPSSLGEDLADQPNERTSDCLLLQK-
 Python -DHIKFSTP-EELVGQPNERTTDCLLLRNK
 Boa_constrictor -DQLKFSSP-EELVGQPNERTDCLLLQNK
 Vipera -DQLKLTSP-EEQVGQPNERTTDCLLLHE-
 Protobothrops -DQLKLTSP-EEQVGQPNERTTDCLLLHE-

ATGAAGTTAATCCTCCTATATTTATGCCTTGTGGGCATATCTTATGCTGGTCCGCTGCGC
Crot_horrid
ATGAAGTTAATCCTCCTATATTTATGCCTTGTGGGCATATCTTATGCTGGTCCGCTGCGC
Crot_mitch
ATGAAGTTAATCCTCCTATATTTATGCCTTGTGGGCATATCTTATGCTGGTCCGCTGCGC
Thamnophis
ATGAAGTTAATCCTCCTATATCTATGCCTTGTAGGCATGTCTTATGCTGGTCCGCTGCGT
Cobra
ATGAAGTTAATCCTCCTATATCTATGCCTTGTAGGCATATCTTATGCTAGTCCGCTGCGC
Pantherophis
ATGAAGTTAATTCTGCTATATCTATGCCTTGTAGGCATGTCTTATGCTGGTCCGCTACGC
Pogona
ATGAAGCTCTTTGTTCTGTATTTATGCCTCGTAGGCACATCATGTGCCATACCATTGCGC

Allig_mississip
TTGCCCCGTAAGGCTGGATTTGGAAGCAAGAGTGAAGAGATGATGCAGTAT---GGCCAA
Allig_sinensis
TTGCCCCGTAAGGCTGGATTTGGAAGCAAGAGTGAAGAGATGATGCAGTAC---GGCCAA
Gharial
TTGCCCCGTAAGGCCGGATTTGGAAGCAAGAGTGAAGAGATGATGCAGTAT---GGCCAA
Crocodilus_nilo
TTGCCCCGTAAGGCCGGATTTGGAAGCAAGAGTGAAGAGATGATGCAGTAT---GGCCAA
Crocodilus_poro
TTGCCCCGTAAGGCCGGATTTGGAAGCAAGAGTGAAGAGATGATGCAGTAT---GGCCAA
Aspidoscelis
AAGCCCCGTCAGGCAGGATTTGGAAGTAAGAGTGAAGAAATGATGCAGTTTGGTGGTCCA
Shinisaurus
AAGCCCCGCAAGGCAGGATTTGGAAGTAAGAGTGAAGAAATGATGCAGTTT---GGTCCCT
Ophisaurus
AAACCCCGCAAGGCAGGATTTGGAAGTAAAAGTGAAGAAATGATGCAGTTT---GGCCCA
Anolis
AAACCCCGCAAGGCAGGATTTGGAAGTAAGAGTGAAGAAATGATGCAGTAT---GGTCCA
Eublepharis
AAACCCCGCAAAGCAGGATTTGGGAGCAAGAGTGAAGAAATGATGCAGTTT---GGTCCG
MournGekko
AAACCCCGCAGAGCAGGATTTGGGAGCAAGAGTGAAGAAATGATGCAGTTT---GGTCCA
Gekko_japon
AAACCCCGCAGAGCAGGATTTGGGAGCAAGAGTGAAGAAATGATGCAGTTT---GGTCCA
Python
AAACCACGCAGGGCAGGATATGGAAGCAAAGTGAAGAAATGACGCAGTTT---GGTCCA
Boa_constrictor
AAACCACGCAAGGCAGGATATGGAAGCGAAAGCGAAGAAATGATGCAATTT---AGTCCA
Vipera
AAACCACGCAGGGCAGGATATGGAAGCAAAGTGAAGAAATGATGCAGTTT---GGTCCA
Protobothrops
AAACCACGCAGGGCAGGATATGGAAGCAAAGTGAAGAAATGATGCAGTTT---GGTCCA
Crot_horrid

AAACCACGCAGGGCAGGATATGGAAGCAAAGTGAAGAAATGATGCAGTTT---GGTCCA
Crot_mitch
AAACCACGCAGGGCAGGATATGGAAGCAAAGTGAAGAAATGATGCAGTTT---GGTCCA
Thamnophis
AAACCACGCAGGGCAGGATACGGAAGCAAAGTGAAGAAATGATGCAGTTT---GGTCCA
Cobra
AAACCACGTAGGGCAGGATATGGAAGCAAAGTGAAGAAATGATGCAGTTT---GGTCCA
Pantherophis
AAACCACGCAAGGCAGGATATGGAAGCAAAGTGAAGAAATGATGCAGTTT---GGTCCA
Pogona
AAACGCCGTAAGGCAGGATTTGGAAGCAAGAGTGAAGAAATGATGCCATTT---GGTGCA

Allig_mississip TATGCCTACATGAACTCACCCGCCATG-----
AATCCCTTTTATGGCTATGGC
Allig_sinensis TATGCCTACATGAACTCGCCCGCCATG-----
AATCCCTTTTATGGCTATGGC
Gharial TATGCCTACATGAACTCGCCCGCCATG-----
AATCCCTTTTATGGCTATGGC
Crocodilus_nilo TATGCCTACATGAACTCGCCCGCCATG-----
AATCCCTTTTATGGCTATGGC
Crocodilus_poro TATGCCTACATGAACTCGCCCGCTATG-----
AATCCCTTTTATGGCTATGGC
Aspidoscelis
TTTGGCTACCTGAATCCCCACACCTGGCTCACTTGGCAGCCTCCTTATACGGTTTCCGT
Shinisaurus TATGGCTATATAAATTCACCA-----
CAATTGGCAGCTTCTTTGTATGGCTACCGT
Ophisaurus
TACAGCTATATGAACTCACCACAAGTAGCTCAGCTGGCAGCTTCTTTATATGGCTACCGT
Anolis
TTTGGCTACCTAAACTCACCTCAATTGACTCAGTTGGCAGCTTCCTTGTATGGCTATCGC
Eublepharis TATTCATATATGAACTCACCA-----
CAATTGGCACCTTTGTTATATGGCTACCGT
MournGekko TATGCTTATATGAACTCACCA-----
CAATTGTCACCTTTCTTATACGGCTATCGC
Gekko_japon TATGCTTATATGAACTCACCA-----
CAATTGTCACCTTTCTTATACGGCTATCGC
Python TATGGTTATATACAGTCACCA-----
CAAGTCACAGGTCCCTTTTATGGCTACCAT
Boa_constrictor TATGGCTATATACATTCACCA-----
CAGGTTGCAGGTTCCCTTTTATGGCTACCAT
Vipera TATGGCTACATAAATTCACCA-----
CAAGTCGCTGGTTCCCTTTTAT-----
Protobothrops TATGGCTATATAAATTCACCA-----
CAAGTTGCGGGTTCCCTTTTATGGCTACCCT
Crot_horrid TATGGCTATATAAATTCACCA-----
CAAGTTGCTGGTTCCCTTTTATGGCTACCCT
Crot_mitch TATGGCTATATAAATTCACCA-----

CAAGTTGCTGGTTCCTTTTATGGCTACCCT
Thamnophis TATGGCAATATTAATTTACCA-----
CAAATTGCTGGTTCCTTTTATGGCTACCAT
Cobra TATGGTTATATAAAATTCACCA-----
CAAATTGCTGGTTCCTTTTATGGCTACCAT
Pantherophis TATGGCTATATAAAATTCACCA-----
CAAATTGCTGGTTCCTTTTATGGCTATCAT
Pogona
TATGGCTTTCTAAACTCACCACAACCTTTCACAGCTCGCAGCATCCTTATATGGCTACCCT

Allig_mississip
TCCAGCTACCCACAGATCTTCCAGCAGCAGCCAGTATGGCCTCAGCAGCAGCTCTACTTG
Allig_sinensis
TCCAGCTACCCACAGGTCTTCCAGCAGCAGCCAGTATGGCCTCAGCAGCAGCTCTACTTG
Gharial
TCCAGCTACCCACAGGTCTTCCAGCAGCAGCCAGTATGGCCTCAGCAGCAGCTCTACTTG
Crocodilus_nilo
TCCAGCTACCCACAGGTCTTCCAGCAGCAGCCAGTATGGCCTCAGCAGCAGCTCTACTTA
Crocodilus_poro TCCAGCTACCCACAGGTCTTCCAGCAGCAGCCAGTATGGCCT---
CAGCAGCTCTACTTG
Aspidoscelis TCACGGCAACCACCGCTGTTCCCTCAG-----
CTACCTCAGCGGCAATTTCTCATG
Shinisaurus
GCAAGTTACCCGACAGATGTTCTCCCAGCAGCCTATATCGCCTCTACAGAGATTTTTTCCTC
Ophisaurus
GCAGGTTACCCACAGATGTTCCCCCAGCAGCCTGGATCGCCTCTGCAGGGGTTTTACCTC
Anolis
TCAGGTTTCCCACAGATGGTCCCTCAGCAGCCTACATTTCCCCTTCAGAGGTTTTACCTC
Eublepharis CCGAGCTACCCGCAACTGTTCCCTCAG-----
CCTCGGCAGAGATTTTTACATC
MournGekko CCAAGTTACCCACAGTTGTTCCCTCAG-----
CCTCTGCAAAGATTTTACTTA
Gekko_japon CCAAGTTACCCACAGTTGTTCCCTCAG-----
CCTCTGCAAAGATTTTACTTA
Python
TCAAGTTATCCACAGATATTCCCCAAGTGGCCTATATTGCCTCTACAGAGATTTTTTCATT
Boa_constrictor
TCAAGTTACCCACAGATGTTCTCCCAGTGGCCTATATTGCCTCTACAGAGATTTTTTCCC
Vipera ---
GGCTACCCACAGATGTTTTCCAGTGGCCTATATTGCCTCTGCAGAGATTTTTTCCTC
Protothrops
TCAGGTTACCCACAGATGTTTTCCAGTGGCCTACATTTGCCTCTGCAGAGATTTTTTCCTC
Crot_horrid
TCAGGTTACCCACAGATGTTTTCCAGTGGCCTATATTGCCTCTGCAGAGATTTTTTCCTC
Crot_mitch
TCAGGTTACCCACAGATGTTTTCCAGTGGCCTATATTGCCTCTGCAGAGATTTTTTCCTC
Thamnophis

TCAAATTACCCACAGATGTTGCCCCAGTGGCCTGTGTTGCCACTGCAGAGATTTTTCCTC
Cobra TCGAAC---
CCACAGATGTTCTCCAGTGGCCTATATTGCCTCTGCAGAGATTTTTCCTC
Pantherophis
TCAAATTACCCACAGATGTTCCCCAGTGGCCTGTATTGCCACTGCAGAGATTTTTCCTC
Pogona
CCAAGTTACCTACAGCTGTTCCCTCAGCAGTCTATGCCACCTTTGTCAAGACCATCCCTC

Allig_mississip TGGCAGCAA---
CAGAAACCAGTACAACCCCTGCCATTCAGCCCCAGCAAAAACCTCGA
Allig_sinensis TGGCAGCAA---
CAGAAACCAGTACAACCCCTGCCATTCAGCCCCAGCAAAAACCTCGA
Gharial TGGCAGCAA---
CAGAAACCAGTACAACCCCTGCAATTCAGCCCCAGCAAAAACCTCGA
Crocodilus_nilo TGGCAGCAA---
CAGAAACCAGTACAACCCCTGCAATTCAGCCCCAGCAAAAACCTCGA
Crocodilus_poro TGGCAGCAA---
CAGAAACCAGTACAACCCCTGCAATTCAGCCCCAGCAAAAACCTCGA
Aspidoscelis TGGCAGCAA---
CAGACTCCAGGTCACCAAGCTGCCCGTTTGCCAGAGCGCAAACCTTCAC
Shinisaurus TGGCAGCCG---
CAGACACCAGTACATCAAGCTGCCCGGCTGCCCCAGCAAAAGCCTCAC
Ophisaurus TGGCAGCCA---
CAGACACCAGTACATCAAGCCGCCGACTGCCCCAGCTTAAGCCTCAC
Anolis TGGCCACAA---
CAGATGCCAGTTCACCAGTCTGCTCGGCCTCCCCAACAGAAGGCTCAC
Eublepharis TGGCCGCAA---
CAAACACCAGCACATCAAGCTGCCAGGCTGCCCCAGCGTAAGCCACAC
MournGekko TGGCCACAA---
CAAACCCAGTACATCAAGCCGCTAGGCTGCCCCAGCGCAAGCCACAC
Gekko_japon TGGCCACAA---
CAAACCCAGTACATCAAGCCGCTAGGCTGCCCCAGCGCAAGCCACAC
Python
TGGCCGCAACCAGCACCACCCTCACATCAAGCAGCTAAGCTTCCCCAGAAGAAGCCTCAA
Boa_constrictor
TGGCCACAACCAGCATCGCCACACATCAGGCAGCTAGGCTCCCCAGCAGAAGCCTCCA
Vipera
TGGCCGCAATCAGCAACACCAGCACATCAAGCTTCTAGGCTTCCCCAGCAGAAGCCACAA
Protobothrops
TGGCCGCCATCAGCAACACCAGCACATCAAGCTTCTAGGCTTCCCCAGCAGAAGCCGCAA
Crot_horrid
TGGCCGCAATCAACAACACCAGCACATCAAGCTTCTAGGCTTCCCCAGCAGAAGCCGCAA
Crot_mitch
TGGCCGCAATCAACAACACCAGCACATCAAGCTTCTAGACTTCCCCAGCAGAAGCCGCAA
Thamnophis
TGGCCGCAATCAGCCTCACCAGTACATCAAGCTTCTAGGCTTCCCCAACAGAAGCTGCAA
Cobra

TGGCCACAATCAGCCTCACCAACCCATCAAGCTTCTAGGCTTCCCCAACAGAAGCCGCAA
Pantherophis
TGGCCACAATCAGCCTCACCAGTACATCAAGCTTCTAGGCTTCCCCAACAGAAGCCACAA
Pogona TGGCAGCAG---
CAGATGCCGGCACATGAAGCCACCAGATTCCCTTCACAGAATCCACAC

Allig_mississip CAAGCTCAA-----
CGTTCGCCACAGCCCAGC-----
Allig_sinensis CAAGCTCAA-----
CGTTCGCCACAGCCCAGC-----
Gharial CAAGCTCAA-----
CGTTCCCCACAGCCCAGC-----
Crocodilus_nilo CAAGCTCAA-----
CGTTCCCCACAGCCCAGC-----
Crocodilus_poro CAAGCTCAA-----
CGTTCCCCACAGCCCAGC-----
Aspidoscelis AAAGCTCCA-----
GGGGTTAAGCACCCAAATATG-----
Shinisaurus CAAACTCCA-----
GTGGCCAAACAGCCAAACAGC-----
Ophisaurus CAAACTCCA-----
GTGGCCGAACAGCCAAAGAGC-----
Anolis CAAACTCCA-----
GTGCCAAAGAAACCAAACAGC-----
Eublepharis CAAACTCCA-----
GCGGCCAGGCAGCCAATCCAA-----
MournGekko CAAACGCTA-----
GGGGCTAGGCAGCCCATCCACAGGCCACAGCTGCCACAG
Gekko_japon CAAACGCTA-----
GGGGCTAGGCAGCCCATCCACAGGCCACAGCTGCCACAG
Python CAAACTCCA-----
GGAACTAAGCAGTCCAACCAA-----
Boa_constrictor CAAACTCCA-----
GGAATTAAGCAGCCCAACCAA-----
Vipera CAAATTCCA-----
GGAACTAAACAGCCCAATCAA-----
Protobothrops CAAATTCCA-----
AGAACTAAGCAGCCCAATCAA-----
Crot_horrid CAAATTCCA-----
GGAACTAAGCAGCCCAATCAA-----
Crot_mitch CAAATTCCA-----
GGAACTAAGCAGCCCAATCAA-----
Thamnophis CAAATTCCA-----
GGAACTAAGCAGCCCAATCAA-----
Cobra CAAATTCCA-----
AGAACTAAGCAGCCCAACCAA-----
Pantherophis CAAATTCCA-----

GAAACTAAGAAGCCCAACCAA-----
Pogona
AGGTTGCCTCAGCAACCTTCAGCAGCCAGGAGGCCAAACAGC-----

Allig_mississip ---
AGGCCACAGCCCCAGCCACAGCCTCGACCACAACCCCGGCTGCAGCCGTCCCAG---
Allig_sinensis ---
AGGCCACAGCCCCAGCCACAGCCTCGACCACAACCCCGGCCGCAGCCGTCCCAG---
Gharial ---
AAGCCTCAGCCCCAGCCACAGCCTCGGCCACAACCCAGCTGCAGCCGTCCCAG---
Crocodilus_nilo ---
AGGCCTCAGCCCCAGCCACAGCCTCGGCCACAACCCAGCCACAGCCGTCCCAG---
Crocodilus_poro ---
AGGCCTCAGCCCCAGCCACAGCCTCGGCCACAACCCAGCCACAGCCGTCCCAG---
Aspidoscelis ---AGGTCTCAGCCAAAGCCCCAGCTACCA-----CCA-----
CAGCCAAGGCGT---
Shinisaurus ---AGGCCACAACCCAGGCCGCAGTTACTG-----CCA---
CAGCAACCAAGATAT---
Ophisaurus ---CGGCCGCAAGCAAGGCCGCAGTTACCA-----CCA---
CAGCAACCACGGTAT---
Anolis ---AGGCCACGACTTAAGCCACGGTTGGTA-----CCA---
CAACAACCAAGATAT---
Eublepharis ---AGGCCGAAGCTGCAGCCACAGATGCCACAGCAGCCA---
CACAAGCCAATACAA---
MournGekko CTGAGGCCACAGCTGAGGCCACAGATGCCGCAGCAGCCA---
CACAAGCCTATACAG---
Gekko_japon CTGAGGCCACAGCTGAGGCCACAGATGCCGCAGCAGCCA---
CACAAGCCTATACAG---
Python ---AGGCCA-----CAGTTACCA-----CCA---
CGGCAACCAAGACCT---
Boa_constrictor ---AGGCCA-----CAGTTACCA-----CCA---
CAGCAACCAAGATAT---
Vipera ---AGGCCA-----CAGTTACCA-----CCA---
CAGCAACCAAGATAT---
Protobothrops ---AGGCCA-----CAGTTACCA-----CCA---
CAGCAACCAAGATAT---
Crot_horrid ---AGGCCA-----CAGTTACCA-----CCA---
CAGCAACCAAGATAT---
Crot_mitch ---AGGCCA-----CAGTTACCA-----CCA---
CAGCAACCAAGATAT---
Thamnophis ---AGGCCA-----CAGTTACCA-----CCA---
CAGCAACCAAGATAT---
Cobra ---AGGCCA-----CAGTTACCA-----
CCACAACAGCAACCAAGATAT---
Pantherophis ---AGGCCA-----CAGTTACCC-----CCA---
CAGCAACCAAGATAT---
Pogona ---AGGCCGCAACCCAAGCTACAGTTACCC-----CCA---

CAACAACCGACACATCAA

Allig_mississip ---CAACCA-----
GCAAAGCCAAAGCCACAAAAGCCGCAAAAG---CAGCCCCCCCCA
Allig_sinensis ---CAACCA-----
GCAAAGCCAAAGCCACAAAAGCCGCAAAAG---CAGCCCCCCCCA
Gharial ---CAGCCA-----
GCAAAGCCAAAGCCGCAAAAGCCGCAAAAG---CCGCCCCCCCCA
Crocodilus_nilo ---CAGCCA-----
GCAAAGCCAAAGCCGCAAAAGCCACAAAAG---CCGCCCCCCCCA
Crocodilus_poro ---CAGCCA-----
GCAAAGCCAAAGCCGCAAAAGCCACAAAAG---CTGCCCCCCCCA
Aspidoscelis ---CAGCAA-----
CCGCAACCGAAAATGCCACAGCTACCAAAG---CTACCTCAAAT
Shinisaurus ---CAACAG-----
CCGCAACCAAAAATGCAACAGCCACCAAAA---CAGCCTCAGAAT
Ophisaurus ---CAACAG-----
CCGCAAGCAAAAATTCAACAGCCATCGAAG---CCGCCTCAAAT
Anolis ---CAACAG-----
CCGCAACCCAAAATACATCTACCAGCTAAACAGCCTCCAGTTGCT
Eublepharis ---CAACAG-----
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MournGekko ---CAACAG-----
CCACGCCCAAGAATACAGCTGCCACCAAAG---AAGCCTCAAAT
Gekko_japon ---CAACAG-----
CCACGCCCAAGAATACAGCTGCCACCAAAG---AAGCCTCAAAT
Python ---CAGCAGCCACCACCACCACCTCAA-----
CCAAAA---CAGCCACAAAAG
Boa_constrictor ---CAGCAG-----CCACAA-----
CCAAAA---CAGCCACAAAAA
Vipera ---CAGCAG-----CCACAACCTCTG-----
CCAAAA---CAGCCACAAAAA
Protobothrops ---CAGCAG-----CCACAACCTCTG-----
CCAAAA---CAGCCACAAAAA
Crot_horrid ---CAGCAG-----CCACAACCTCTG-----
CCAAAA---CAGCCACAAAAA
Crot_mitch ---CAGCAG-----CCACAACCTCTG-----
CCAAAA---CAGCCACAAAAA
Thamnophis ---CAGCAA-----CCACAACCTCTG-----
CCAAAA---CAGCCACAAAAG
Cobra ---CAGCAA-----CCACAACCTCTG-----
CCAAAA---CTGCCACAAAAG
Pantherophis ---CAGCAG-----CCACAACCTCTG-----
CCAAAA---CAGCCACAAAAG
Pogona GTTCAACAG-----
CCCCAAATCAAAGTACAGCAACCACCCAAACTGCCTCCAAGTGCT

Allig_mississip
ACTCAGCCAGCACATCCTTCTCATTCTCAGCCCCAGCACAGCCCCGCAATGAGGAAAAA
Allig_sinensis
ACTCAGCCAGCACATCCTTCTCATCCTCAGCCCCAGCACAGCCCCGCAATGAGGAAAAA
Gharial
ACTCAGCCAGCACATCCCTCTCGTCCTCAGCCCCAGCACAGCCCCGCAATGAGGAAAAA
Crocodilus_nilo
ACTCAGCCAGCACATCCGTCTCGTCCTCAGCCCCAGCACAGCCCCGCAATGAGGAAAAA
Crocodilus_poro
ACTCAGCCAGCACATCCTTCTCGTCCTCAGCCCCAGCACAGCCCCGCAATGAGGAAAAA
Aspidoscelis ACTAATCCTTCTCAGACT-----
CAGCAAGTACCAGTTCAGCAACCAAAAGCAAGGAAG
Shinisaurus ATCAGACCTACTCAGACT---
CGCCAGCAAGTGCCAATTCAGCAACCCAAGTGGGGGAAT
Ophisaurus ACCCGCCCTACTCAGACT---
CACCAGCAAGTGCCAGTTCAGCAGCCCAAGCGGGGAAT
Anolis ACCCATCCTTTCCAGCCT---
CAGCCACAAACACCCGTTTCAGCCACCAAGGGGGAGAAG
Eublepharis ACCAGCTCTCCTCAGATT---
CACCACCAGGGGCCCGTGTATCAGTCCAAGAGGGTCCAG
MournGekko ACCAGTCCCTCCGCAGACT---
CCCCATCAAGTGCCAGTGCATCAATCCAAGGGGGTCAA
Gekko_japon ACCAGTCCCTCCGCAGACT---
CCCCATCAAGTGCCAGTGCATCAATCCAAGGGGGTCAA
Python ACCAACCCATCTCACACT---
CACCCACAAGTGCCAATGCAGCATCCTACGGAGGGAAAA
Boa_constrictor ACCAACCCATCTCAGATT---
TACCACAAGTGCCCATCCAGCATCCTAAGGAGGGAAAA
Vipera ACCAAGCCATCTCAGACT---
TACCACAAGTGCCCTTTTCNNNNNNNNNNNNNNNNNNNN
Protobothrops ACCAACCCATCTCAGACT---
TACCACAAGTGCCCTTTTCAGCATCCTAAGGAGGGAAAA
Crot_horrid ACCAACCCATCTCAGACT---
TACCACAAGTGCCCTTTTCAGCATCCTAAGGAGGGAAAA
Crot_mitch ACCAACCCATCTCAGACT---
TACCACAAGTGCCCTTTTCAGCATCCTAAGGAGGGAAAA
Thamnophis ACCAACCCATCTCAGACG---
TACCACAAGTGCCATTTTCAGTATCCTACGGAGGGAAAA
Cobra ACCAACCCATCTCAGACT---
TACCACAAGTGCCATTTTCAGCATCCTAAGGAGGGAAAA
Pantherophis ACCAACCCATCTCAGACG---
TACCACAAGTGCCATTTTCAGCATCCTAAGGAGGGAAAA
Pogona GCGGACCCTTCTCAACCT---
CAACCACAACCTGCCT-----

Allig_mississip -----
CAGCTATCGCCCCAGGTGTATTTTCCCTATAGTAATGCACAT

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Allig_sinensis      -----
CAGCTATCGCCCCAGAAGTGTATTCCCTACAGTAATGCACAT
Gharial            -----
CAGCTATCGCCCCAGGTGTATTTTCCCTATAGTAATGCACAT
Crocodilus_nilo    -----
CAGCTATCGCCCCAGGTGTATTTTCCCTATAGTAATGCACAT
Crocodilus_poro    -----
CAGCTATCGCCCCAGGTGTATTTTCCCTATAGTAATGCACAT
Aspidoscelis
GAGCAGCAGCAGCAGCAACAACAGCAGCCTCAG-----GTACTC
Shinisaurus        -----
CAGCAGCAGCCTCAG-----GCACTT
Ophisaurus         -----
CAGCAACCGCCTCAG-----GCCTTT
Anolis             -----
CCGCAACAGCCACAG-----GCATTC
Eublepharis        -----
CCACAGCAACCTCAG-----ATATTG
MournGekko         -----
CAGCAACAACCTCAG-----ATATTG
Gekko_japon        -----
CAGCAACAACCTCAG-----ATATTG
Python             -----
CAGCAACATCCCAG-----GCCTTT
Boa_constrictor    -----
CAGCAACAGCCCCAG-----GCCTTT
Vipera             -----
NNNNNNNNNNNNNNNN-----GGCTTT
Protobothrops      -----
CAGCAACAGCCTCAG-----GGCTTT
Crot_horrid        -----
CATCAACAGCCTCAG-----GGCTTT
Crot_mitch         -----
CAGCAACAGCCTCAG-----GGCTTT
Thamnophis         -----
CAGCAACAGCCCCAG-----GGCTTT
Cobra              -----
CAGCAACTGCAACAGCAACAGCCCCAG-----GGTTTT
Pantherophis       -----
CAGCAACAGCCCCAG-----GGCTTT
Pogona             -----
GATCTGCAGTCCAAG-----GCATTT

Allig_mississip    TTCCTTATCAGCAGCAACCTTGGCACATCCCACAGATT-----
TACAACCAGGGAGGC
Allig_sinensis     TTCCTTATCAGCAGCAACCTTGGCACATCCCACAGATT-----
TACAACCAGGGAGGC

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Gharial TTTCCCTTATCAGCAGCAGCCTTGGCACATCCCACAGATT-----
 TACAACCAGGGAGGC
 Crocodilus_nilo TTTCCCTTATCAGCAGCAGCCTTGGCACATCCCACAGATT-----
 TACAACCAGGGAGGC
 Crocodilus_poro TTTCCCTTATCAGCAGCAGCCTTGGCACATCCCACAGATT-----
 TACAACCAGGGAGGC
 Aspidoscelis CCACCATACCTGCAACAGCCCTGGCATT TTTCCACAGATC-----
 TTTGTC AAGGAGCC
 Shinisaurus CCTCCACATCTGCAGCAGCCCTGGCATT TTTCCACCGATT-----
 TTCGGTCATGGAGGC
 Ophisaurus CCTCCACATCCTCAGCAGCCCTGGCATT TTTCCACAGATG-----
 TTTGGTCATGGAGGC
 Anolis CCTCCACATCCTCAACAGCCCTGGCAATT TTTCCACAGATT-----
 TTTGGTCATGGAGGC
 Eublepharis TTTCCAAGACAGCAATATCCCTGGCATT TTTTCACAGATT-----
 TTCAATCAAGGAGGC
 MournGekko TTTCCAAATCAGCAACATCTCTGGCATT TTTCCACAGATT-----
 CTCAGTCAAGGAGGC
 Gekko_japon TTTCCAAATCAGCAACATCTCTGGCATT TTTCCACAGATT-----
 CTCAGTCAAGGAGGC
 Python GCTCCATATCCACAACAGCCTTGGCATT TTTCCACAGATT-----
 TTTGGTGCAGGAGGC
 Boa_constrictor CCTCCATATCCACAACAGCCTTGGCATT TTTCTACAGATT-----
 TTTGGCCCAGGATGC
 Vipera CCTCCATATTCACAACCACCTTGGCATT TTTCCACAGTTCCCATATATTGTATCAAGAGGC
 Protobothrops CCTCCATATCCGCAACCACCTTGGCATT TTTCCACAGCTT-----
 TTTGGTCCAAGAGGC
 Croc_horrid CCTCCATATCTGCAACCACCTTGGCATT TTTCCACAGCTT-----
 TTTGGTTCAAGAGGC
 Croc_mitch CCTCCATATCCGCAACCGCCTTGGAAATT TTTCCACAGCTT-----
 TTTGGTTCAAGAGGC
 Thamnophis CCTCCATATTCACAACCACCTTGGCATT TTTCCACAGCTA-----
 TTTGGGTCCAGAGGC
 Cobra CCTCCATATTCACAACCACCTTGGCATT TTTCCACAGATT-----
 TTTGGTCCAAGAGGC
 Pantherophis CCTCCATATTCACAACCACCTTGGCATT TTTCCACAGATT-----
 TTTGGTCCAAGAGGC
 Pogona CTTCACATCAGCAACAGCCCTGGCATT TTTCCACAGGTGATG---
 TTCGGTCATGGAGGC

Allig_mississip TTCTTACCACAG---
 CTGAACCCACAACACAGACAAATGCCTCCAGGG-----TTTGGA
 Allig_sinensis TTCTTACCACAG---
 CTGAACCCACAACACAGACAAATGCCTCCAGGG-----TTTGGA
 Gharial TTCTTACCACAG---
 CTAACCCACAACACAGACAAATGCCTCCAGGG-----TTTGGA

Crocodylus_nilo TTCTTACCACAG---
CTAAACCCACAACACAGACAAATGCCTCCAGGG-----TTTGGA
Crocodylus_poro TTCTTACCACAG---
CTAAACCCACAACACAGACAAATGCCTCCAGGG-----TTTGGA
Aspidoscelis TTCCAGCCA-----
TTTGACCATATCAGGGACATATGCCA-----TTGGGA
Shinisaurus
TTCCAACCACAACCATTTCAGGCCATATCAGGGACATGTGCCA-----TTTGGA
Ophisaurus
TTCCAACCACAATCGTTCGGACCATATCAGGGACGTATGCCA-----TTTGGA
Anolis
TTCCAGCCACAACACTGTTCAACCATATCAAGGACATATGCCA-----TTTGGA
Eublepharis
TTCCACCCACAATCCTTTGGCCATTTCAAGGAAGTATGCCTCCTGGA-----TTTGGA
MournGekko
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Gekko_japon
TTCCACCCACAACCATTTAGCCCATTTTCACGGACGTATGCCTGCTGGA-----TTTGGA
Python
TTCCAACCACAACAGTTTGGCCCCTATCAGAGACATATGCCA-----TTTGGA
Boa_constrictor
TTCCAACCACAACCGTTTGGCCNTATCAGGGACATATGCCA-----TTTGGA
Vipera TTCCATCCAAGACATTTA---
TCGGCAATGGGCCATATGCCA-----TTTGGA
Protobothrops
TTCCAACCAAAACATTTTGGGTCTTATCAGGGACATATGCCA-----TTTGGA
Crot_horrid
TTCCAACCAAAACATTTTGGGTCTTATCAGGGACATATGCCA-----TTTGGA
Crot_mitch
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Thamnophis
TTCCAACCCAAACGGAGCCAAGGTTATTGCCACCATATGCCA-----TTTGGA
Cobra
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Pantherophis
TTCCAACCACAACAGTATGGGTCATATCAGGGACATATGCCA-----TTTGGA
Pogona
TTCCAGCCGCAAATGTTTCGGCCATATCAGGGACGCACGCCGCTTGGGCGACCACTTGGGA

Allig_mississip
CAGCCACCTATCAGCAATGAAGAAGGAGGGAATCCTTACTATGGATACTTCTTTCAAGGG
Allig_sinensis
CAGCCACCTATCAGCAATGAAGAAGGAGGGAATCCTTACTATGGATACTTCTTTCAAGGG
Gharial
CAGCCACCTATCAGCAATGAAGAAGGAGGGAATCCTTACTATGGATACTTCTTTCAAGGG
Crocodylus_nilo
CAGCCACCTATCAGCAACGAAGAAGGAGGGAATCCTTACTATGGATACTTCTTTCAGGGG

Crocodilus_poro
CAGCCACCTATCAGCAATGAAGAAGGAGGGAATCCTTACTATGGATACTTCTTTCAAGGG
Aspidoscelis CGGCCACCTGTCAGCAATGAAGAA---
GGGACTCCATATTTTGGATATGGTTTCCATGGG
Shinisaurus CGTCCACCTGTCAGCACTGAAGAA---
GGGACTCCCCATTATGGATATGGCTTCCAAGGG
Ophisaurus CGACCACCTGCCAGC---GAAGAA---
GGGACTCCCTATTTTGGGTATGGCTACCAAGGT
Anolis CGGCCACCTAACAGC---GAAGAA---
GGGAATCCCTATTTTGGACCTGGCTACCAAGGG
Eublepharis CATCCACCAATCAGTAATGAAGAA---
GGGACTCCATACTATGGATATGGCTATCATGGC
MournGekko CGACCACCAATCAGCAATGAGGAA---
GGGACACCGTACTATGGATATGGCTATCCAGGA
Gekko_japon CGACCACCAATCAGCAATGAGGAA---
GGGACACCGTACTATGGATATGGCTATCCAGGA
Python CGACCACCTATCAGCAATGAAGAA---
GGGACTCCATATTTTGGATATGGCTACCATGGG
Boa_constrictor CGGCCACCTGTCAGCAATGAAGAA---
GGGACTCCATATTTTGGATATGGCTACCATGGG
Vipera CAGCCACCTGTCAGCAATGAAGAA---
GGGACTCCGTATTTTGGATATGGCTACCACGGG
Protobothrops CAGCCACCTGTCAGCAATGAAGAA---
GGGACACCGTATTTTGGATATGGCTACCACGGG
Crot_horrid CAGCCACCTGTCAGCAATGAAGAA---
GGGACACCGTATTTTGGATATGGGTACCACGGG
Crot_mitch CAGCCACCTGTCAGCAATGAAGAA---
GGGACACCGTATTTTGGATATGGCTACCATGGG
Thamnophis CAGCCACCTGTCAGCAATGAAGAA---
GGGACTCCATATTTTGGATATGGCTACCATGGG
Cobra CAGCCACCTGTCAGCAACGAAGAA---
GGGACTCCATATTTTGGATATGGCTACCATGGG
Pantherophis CAGCCACCTGTCAGCAATGAAGAA---
GGGACTCCATATTTTGGATATGGCTACCATGGG
Pogona CGGCCACATGTGAGCAACGAAGAA---
GGGGCTCCTTATTTTGGGTATGGCTACCACGGG

Allig_mississip
CTTGACAGAGGCCCCCTATTACTCAGAGGAAATGTTTGAACATGAGTATGACAAACCC
Allig_sinensis
CTTGACAGAGGCCCCCTATTACTCAGAGGAAATGTTTGAACATGAGTATGACAAACCC
Gharial
CTTGACAGAGGCCCCCTATTACTCAGAGGAAATGTTTGAACACGAGTACGACAAACCC
Crocodilus_nilo
CTTGACAGAGACCCCCCTATTACTCAGAGGAAATGTTTGAACACGAGTACGACAAACCC
Crocodilus_poro
CTTGACAGAGACCCCCCTATTACTCAGAGGAAATGTTTGAACACGAGTACGACAAACCC

Aspidoscelis
 CTGGGAGGTAGACCTCCCTATTACTCAGAAGAGATGTTTGAACAAGACTTTGAGAAACCC
 Shinisaurus
 ATGGGAGGTAGACCTCCTTATTATTCTGAAGAGATGTTTGAACAAGACTTTGAGGAAGCC
 Ophisaurus -----
 AGACCTCCTTATTATTCTGAAGAGATGTATGAACAAGACTTCGAGAAACCC
 Anolis
 ATGGGCGGTTCGGCCTCCATATTATTCTGAAGAGATGTTTGAACAAGAA-----
 Eublepharis CTGGGAAACAGACGTCCATATAATTCTGAAGAG---
 TTTGAAAATGACTATGAGAAACCC
 MournGekko CTGGGAGTCAGG---CCCTATAATTCTGAAGAG---
 TTTGAACAAGACTATGAGAAACCC
 Gekko_japon CTGGGAGTCAGG---CCCTATAATTCTGAAGAG---
 TTTGAACAAGACTATGAGAAACCC
 Python
 TTAGGAAATAGGCTTCCTTATTATTCTGAAGAAATGTTTGAACAAGACTTTGAGAAACCC
 Boa_constrictor
 TTAGGAAATAGGCCTCCTTACTATTCTGAAGAGATGTTTGAACAAGACTTTGAGAAACCC
 Vipera
 TTAGGAAATCGGCCTCCTTATTATTCTGAAGAGATGTTTGAACAAGACTTTGAGAAACCC
 Protobothrops
 TTAGGAAATCGGCCTCCTTATTATTCTGAAGAGATGTATGAACAAGACTTTGAGAAACCC
 Crot_horrid
 TTAGGAAATCGGCCTCCTTATTATTCTGAAGAGATGTATGAACAAGACTTTGAGAAACCC
 Crot_mitch
 TTAGGAAATCGGCCTCCTTATTATTCTGAAGAGATGTATGAACAAGATTTTGAGAAACCC
 Thamnophis
 TTAGGAAATCGGTCTCCTTATTATTCTGAAGAGATGTTTGAACAAGACTTTGAGAAACCC
 Cobra
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 Pantherophis
 TTAGGAAATCGGCCTCCTTATTATTCTGAAGAGATGTTTGAACAAGACTTTGAGAAACCC
 Pogona ATGGGACATAGACCTCCT---
 TATTCTGAAGAAATGTTTGAACAAGACTTTGAAGAACCT

 Allig_mississip
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 Allig_sinensis
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 Gharial
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 Crocodilus_nilo
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 Crocodilus_poro
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 Aspidoscelis AAA---GAAAAAGATCCC-----
 CCAGCACCTGACCCTGCAACTAATTCC

Shinisaurus AAA---GAAAAAGAAGCCCCTAAA-----
GCAACTGATCCTGCAACAAACTCA
Ophisaurus AAA---GAAAAAGAGCCCCCTAAA-----
ACAACGGATCCTCCAACCAACTCA
Anolis -----GACAAAGAAGCACCCAAA---
GAGAGCCCAGCAACTGACCCAGTGACCAATTCA
Eublepharis AAA---
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MournGekko AAA---
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Gekko_japon AAA---
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Python AAA---GAAAAAGACTCCCCCTAAA---
GAGAATCCAGCAGCAGATCCTATAACAAACTCA
Boa_constrictor AAA---GAAAAAGACCCCCCTAAA---
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Vipera AAA---GAAAAAGAACCCCCCTAAG---
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Protobothrops AAA---GAAAAAGAACCCCCCTAAG---
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Crot_horrid AAA---GAAAAAGAACCCCCCTAAG---
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Crot_mitch AAA---GAAAAAGAACCCCCCTAAG---
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Thamnophis AAA---GAAAAAGAACCCGCTAAA---
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Cobra AAA---GAAAAAGAACCCCCCTAAA---
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Pantherophis AAA---GAAAAAGAACCCCCCTAAA---
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Pogona GTA---GAAAAAGAACCTGCTAAA---
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Allig_mississip
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Allig_sinensis
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Gharial
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Crocodilus_nilo
ACTGTCCCAGTTGTTAGCACGACCACACCCAGTCCCCCAGCCAAGGAGGGGACCGAGGA
Crocodilus_poro
ACTGTCCCAGTTGTTAGCACGACCACACCCAGTCCCCCAGCCAAGGAGGGGACCGAGGA
Aspidoscelis
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Shinisaurus
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Ophisaurus
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Anolis ACT-----
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Eublepharis ACA-----
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MournGekko ACA-----
GACACAAATTCAACTCTTTCCAATCCATCCAGC-----CAAGCA
Gekko_japon ACA-----
GACACAAATTCAACTCTTTCCAATCCATCCAGC-----CAAGCA
Python ACTGTTTCAGACACAAATTCAACCATT-----
CCAGCTAGC-----CATGGA
Boa_constrictor ACAGTTTCAGACACAAATTCAACCATT-----
CCAGCCAGC-----CATGGA
Vipera ACGGTTTCAGACACAAATTCCACCATT-----
CCAGCCAGC-----CATGGA
Protobothrops ACAGTTTCAGACACAAATTCAACCATT-----
CCAGCCAGC-----CATGGA
Crot_horrid ACAGTTTCAGACACAAATTCAACCATT-----
CCAGCCAGC-----CATGGA
Crot_mitch ACAGTTTCAGACACAAATTCAACCATT-----
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Thamnophis ACAGTTTCGACACAAATTCAACCATT-----
CCAGCCAGC-----CATGGA
Cobra ACAGTTTCAGACACAAATTCAACCATT-----
CCAGCCAGC-----CATAGA
Pantherophis ACAGTTTCAGACACAAATTCAACCATT-----
GCAGCCAGC-----AATGGA
Pogona
ACCGTCGCCGACACGAATACAACGGTTTCTAACCAGCCAGC-----CAAGGA

Allig_mississip
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Gharial
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Crocodilus_nilo
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Crocodilus_poro
GGGAATGCAACCCACCCTGGGGTCAGCGCTGGGGGAGCGGGACCCCTTCCCAAACCCC
Aspidoscelis GAGAATGCTACTTTCTGGACTCAGTACCTCA-----
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Shinisaurus
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Ophisaurus
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Anolis
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Eublepharis
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MournGekko
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Gekko_japon
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Python
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Boa_constrictor
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Vipera
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Protobothrops
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Crot_mitch
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Thamnophis
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Cobra
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Pantherophis
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Pogona
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ACACCTTCTCCTACAGTTAATATCTCC
Allig_sinensis GAGAACAAGCCAGCTGGTGTGAATGAGACC---
ACACCTTCTCCTACAGTTAATATCTCC
Gharial GAGAACAAGCCAGCTGTTGAGAATGGGACC---
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Crocodilus_nilo GAGAACAAGCCAGCTGTTGAGAATGGGACC---
ACACCTTCTCCTACAGTTAATATCTCC
Crocodilus_poro GAGAACAAGCCAGCTGTTGAGAATGGGACC---
ACACCTTCTCCTACAGTTAATATCTCC
Aspidoscelis GAGGGCAAATCAATTGGTGGT-----
CCAACGCTTTCTCCCACTGATTATGTTCA
Shinisaurus
CAAAGCAAATGGTTAGTGGGAATGGGGTCCCAACACCTTCTCCTACTGTTCTCATATCA
Ophisaurus
CAAAGCAAATGCTTAGCGGGAATGGGGTTCACACCTTCTCCTAGTGTTCTCATGTCA
Anolis
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Eublepharis
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MournGekko
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Gekko_japon
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Python
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Boa_constrictor
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Vipera -----
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Protothrops -----
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Crot_horrid -----
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Crot_mitch -----
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Cobra
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Pogona
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Allig_mississip
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Allig_sinensis
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Crocodilus_poro
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Aspidoscelis -----
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Shinisaurus -----
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Ophisaurus -----
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Anolis -----
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Eublepharis -----
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MournGekko -----
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Gekko_japon -----
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Python -----
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Boa_constrictor -----
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Vipera -----
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Protobothrops -----
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Crot_horrid -----
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Crot_mitch -----
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Pantherophis -----
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Pogona -----
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Allig_mississip AGGAGGAATGCTCCAACCTTTGAC---
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Allig_sinensis AGGAGGAATGCTCCAACCTTTGAC---
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Gharial GGGAGGAATACTCCAACCTTTGAC---
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Crocodilus_poro GGGAGGAGTACTCCAACCTTTGAC---
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Aspidoscelis AGACCTAACTCTCCAAGCATGAAT---
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Shinisaurus AGGCCTCAGTTTCCAATGTCAAT---
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Ophisaurus AGACCAAAGTCTTCAACTGTCAAT---
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Anolis AGGTCTAAGCTTCCAATGGTGAT---
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Eublepharis
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MournGekko
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Gekko_japon
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Python AGGCCTAAGCCTACAAATGCCAAT---
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Boa_constrictor AAGCCTAAGTCTACAAATGCCAAT---
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Vipera AGACCTAAGTCTACAAATACCAAT---
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Protobothrops AGACCTAAGTCTACAAATACCAAT---
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Crot_horrid AGACCTAAGTCTACAGATACCAAT---
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Crot_mitch AGACCTAAGTCTACAGATACCAAT---
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Cobra AGACCTAAGTCTACAAATACCAAT---
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Pogona CAGCCTAAGTCTCCAAT-----
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Allig_mississip
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Allig_sinensis
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Crocodilus_nilo
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Crocodilus_poro
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Aspidoscelis TCTGCAGGGCATGGTTCAAAAT-----
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Shinisaurus TCCACAGGGCATGGTTCACAT-----
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Ophisaurus CCCACAGGGCATGGTTCACAT-----
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Anolis TCCACTATGCAAGTTTCTAAT-----
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Eublepharis TCCACAGGGAATGGTTTGCCT-----
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MournGekko TCCACAGGAAATGGTCTGCAT-----
GTCTACAAACCCTATCCA
Gekko_japon TCCACAGGAAATGGTCTGCAT-----
GTCTACAAACCCTATCCA

Python TCCAGAGGACATAGTTCATAT-----
 ATTTATAAAGCCAACCCA
 Boa_constrictor TCCAGAGGACGTAGTTCATAT-----
 ATTTATAAACCCAACACA
 Vipera TCCAGGGGACGTGATTCATAT-----
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 Protobothrops TCCAGGGGACGTGATTCATAT-----
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 Croc_horrid TCCAGGGGACGTGAGTCATAT-----
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 Croc_mitch TCCAGGGGACGTGATTCATAT-----
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 Thamnophis TCAAGGGGACACGGTTCAGAT-----
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 Cobra CCCAGGGGACGTGGTACATAT-----
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 Pantherophis TCCAGGGGACGTGGTTCATAT-----
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 Pogona TCAACAGGGCATGTCCCACAT-----
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 Allig_sinensis
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 Gharial
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 Shinisaurus
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 Ophisaurus
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 Anolis CATATGGAAAATACAAAGCAGAAT---
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 Eublepharis
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 Gekko_japon
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 Python
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Boa_constrictor
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Vipera
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Protobothrops
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Crot_horrid
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Crot_mitch
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Thamnophis
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Cobra
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Pantherophis
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Pogona
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Allig_mississip
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Allig_sinensis
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Gharial
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Aspidoscelis
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Shinisaurus
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Ophisaurus
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Anolis
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Eublepharis
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MournGekko
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Gekko_japon
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Python
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Boa_constrictor
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Vipera
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Protobothrops
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Crot_horrid
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Crot_mitch
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Thamnophis
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Cobra
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Pogona
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Allig_mississip GGAGACCTCCAGAGCAGACCCAGC-----
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Allig_sinensis GGAGACCTCCAGAGCAGACCCAGC-----
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Gharial GGAAACCTCCAGAGCAAACCCAGC-----
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Crocodilus_nilo GGAAACCTCCAGAGCAAACCCAGC-----
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Crocodilus_poro GGAAACCTCCAGAGCAAACCCAGC-----
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Aspidoscelis GAAGGTCCACAGAATGCCAACAGC-----
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Shinisaurus GGTAATCTTCATAATACAAACATC-----
AACCACCCCTCAACAGGAACAGAACCTATC
Ophisaurus GGTAATCTCCAGAATACCAATATC-----
AACCATCCCTCAACAGTTTCTGGACCTAAC
Anolis GGTAATATCCAAAACACAAATGTC-----
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Eublepharis GGCAATCTCCAGAACATCAACAACAACAACAACATACCA---
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MournGekko
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Gekko_japon
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Python GATAATCTTCAGAGAATTAACAGT-----
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Boa_constrictor GATAATCTTCAGAGAATTAATAGT-----
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Vipera ACTGATCTGCAGAGAATTAACAGT-----
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Protobothrops ACTAATCTGCAGAGAATTAACAGT-----
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Crot_horrid ACTAATCTGCAGAGAATGAACAGT-----
AATCACCCAACAGCAAAAAATAGACCAAAC
Crot_mitch ACTAATCTGCAGAGAATTAACAGT-----
AATCACCCAACAGCAAAAAATAGACCAAAC
Thamnophis GCTAATCTCCAGAGAATTAACAGT-----
AATCACCCAACAGCAAAAAATAGGCCAAAC
Cobra GCTAACCTGCAGAGAATTAACAGT-----
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Pantherophis
GCTAATCTGCAAAGAATTAACAGAGAATTAATTAATCCACCAGCAAAAAATAGGCCAAAC
Pogona GGTAATCTCCAAAGTACAAACAGT-----
AACCAAGCCATGGCAAACCCTAGACCTATC

Allig_mississip CCATCAGGATCCGAATTCCAACAG-----
CATGGGAAGAGGGCAGCAGGCCAAAGACAG
Allig_sinensis CCATCAGGACCCGAATTCCAACAG-----
CATGGGAAGAGGGCAGCAGGCCAAAGACAG
Gharial CCATCAGGACCTGAACTCCAACAG-----
CCTGGGAAGAGGCCAGCAGGCCAAAGACAG
Crocodilus_nilo CCATCAGGACCTGAATTCCAGCAG-----
CCTGGGAAGAGGCCAGCAGGCCAAAGACAG
Crocodilus_poro CCATCAGGACCTGAATTCCAACAG-----
CCTGGGAAGAGGCCAGCAGGCCAAAGACAG
Aspidoscelis
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Shinisaurus
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Ophisaurus
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Anolis
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Eublepharis
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Vipera
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Protobothrops
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Crot_horrid
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Thamnophis
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Cobra
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Pantherophis
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Pogona
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Allig_mississip
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Allig_sinensis
AGACCACCTTTCCTGACACACATCCCTTGAGCCAGCGGCAAAATGCACCCTCTTACAGC
Gharial
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Crocodilus_nilo
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Crocodilus_poro
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Aspidoscelis
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Shinisaurus
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Ophisaurus
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Anolis
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Eublepharis
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MournGekko
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Gekko_japon
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Python
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Boa_constrictor
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Vipera
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Protobothrops
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Crot_horrid
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Crot_mitch -----
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Thamnophis -----
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Cobra -----
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Pantherophis -----
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Pogona
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Allig_mississip
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Allig_sinensis
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Gharial
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Crocodilus_nilo
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Crocodilus_poro
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Aspidoscelis GATAATGGTCTACATAACCCCTCCA-----
CCAGAAGGTCATTCC---CTGGAT
Shinisaurus GATAATAGTCTAAATGGTTCCCA-----
CCTGAAGGTCATTCC---CTGGAT
Ophisaurus GATAATAGTCTAAATAGTTCCCA-----
CCTGAAGGCCACTCC---CTGGAT
Anolis GACAATGATCCAAAAAATTCTCCA-----
CCTGAAGGCCATCCT---CTGGAC
Eublepharis GATAACAACCTTGAATAGTTTCCCA-----
CCGGAAGGCCATTCC---ATGGAT
MournGekko GATAACAGCCTCAATAGTTTCCCA-----
CCTGAAGGCACTTCAGGCGTGGAT
Gekko_japon GATAACAGCCTCAATAGTTTCCCA-----
CCTGAAGGCACTTCAGGCGTGGAT
Python GATAATAACAACCTAGTTCTCCA-----
TCAGAAAGCCATTCT---CTG---
Boa_constrictor GATAATAACAACCTAGTTCTCCA-----
TCAGAAAGCCATTCT---CTG---
Vipera GGTAATAACAACCTAGTTCTCCA-----
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Protobothrops GGTAATAACAACCTAGTTCTCCA-----
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Crot_horrid GGTAATAACAACCTAGTTCTCCA-----
TTAGAAAGTCATTCT---CTA---
Crot_mitch GGTAATAACAACCTAGTTCTCCA-----
TTACAAAGTCATTCT---CTA---

Thamnophis CGTCATAAACAACCTAGTTCTCCA-----
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Cobra GGTAATAAACAACCGAGTTCTCCA-----
TCAGAAAGCCATTCT---GTG---
Pantherophis GATAATAAACAACCTAGTTCTCCA-----
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Pogona GATAATTATCTGCATAATTCTCCA-----
CCTGAAGGCCATTCC---GTGGAT

Allig_mississip
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Gharial
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Crocodilus_nilo
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Crocodilus_poro
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Aspidoscelis CCA-----
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Shinisaurus
CCACAGTTTAATACATTAGAACGAGCTGAGAATGTCTATAATGCAAGAGAAGGCTTTGAT
Ophisaurus
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Anolis CCACAGTTTAAGACAATG---
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Eublepharis
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MournGekko
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Gekko_japon
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Python -----
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Boa_constrictor -----
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Vipera -----
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Protobothrops -----
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Crot_horrid -----
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Crot_mitch -----
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Thamnophis -----
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Cobra -----
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Pantherophis -----
AACAAAGTGAAGAAAACACGGAT
Pogona
CCACAGATTAATACATTAAGG-----

Allig_mississip
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Allig_sinensis
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Gharial
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Crocodylus_nilo
AAAATCCCTGCTTCTGGGCTGCAGCTGACCAGCCAACCCACTCCAAAGGGAGTATTCCTG
Crocodylus_poro
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Aspidoscelis
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Shinisaurus
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Ophisaurus
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Anolis
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Eublepharis
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Mourngekko
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Python
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Vipera
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Protobothrops
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Thamnophis
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Cobra
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Pantherophis

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Pogona

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Allig_mississip

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Allig_sinensis

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Gharial

GATGCAAGGAGACATCCATCTACACCAGAAACCAGCCAGCGGGACTGGGAGAAACAGGCA

Crocodilus_nilo

GATGCAAAGAGACATCCATCTACACCAGAAGCCAGCCAGCAGGACTGGGAGAAACAGGCA

Crocodilus_poro

GATGCAAGGAGACATCCATCTACACCAGAAGCCAGCCAGCAGGACTGGGAGAAACAGGCA

Aspidoscelis

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Shinisaurus

GCCACAAGCAGAACTCCATTAGAAACAGAAACCCATCAGTATGATCGGAAGGAGCAGTCC

Ophisaurus

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Python

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Boa_constrictor

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Vipera

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Protobothrops

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Crot_horrid

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Crot_mitch

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Thamnophis

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Cobra

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Pantherophis

GATACAAGGGGAACTCCATTTGAAAAAGAAGCC-----

Pogona

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Allig_mississip

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Gharial

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Crocodilus_nilo

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Crocodilus_poro

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Aspidoscelis

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Shinisaurus

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Ophisaurus

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Anolis

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Eublepharis

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Gekko_japon

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Vipera

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Protobothrops

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Crot_horrid

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Crot_mitch

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Thamnophis

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Cobra

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Pantherophis

TTTATTCATCCTGATCATCAGAGAGAACAATTTCCATCTTTACAAAACCAATGTGGAAC

Pogona

CCCAATCCTCCAGATCGTGAAAGAGAACGATTTCCATCTGCACAGAACCAATGTGGAGC

Allig_mississip CACCAGCAGAATTCCCCACCTTTT---
GAAGCAGGGCTGCATGAATCCTCAACATATCCA
Allig_sinensis CACCAGCAGAATTCCCCACCTTTT---
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Gharial CACCAGCAGAATTCTCCACCTTTT---
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Crocodilus_nilo CACCAGCAGAATTCCCCACCTTTT---
GAAGCAGGGCAGCGTGAATCCTCAACATATCCA
Crocodilus_poro CACCAGCAGAATTCCCCACCTTTT---
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Aspidoscelis
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Shinisaurus
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Ophisaurus
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Anolis
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Eublepharis
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Gekko_japon
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Python ---
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Boa_constrictor ---
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Vipera ---
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Protobothrops ---
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Crot_horrid ---
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Crot_mitch ---
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Thamnophis ---
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Cobra ---
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Pantherophis ---
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Pogona
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Allig_mississip CCAGGTGCCTTGTTTGGCCAAAGGGGAAGT---

GTTTCCTACCCTGAATACAATTCC---
Allig_sinensis CCAGGTGCCTTGTTTGGCCAAAGGGGAAGT---
GTTTCCTACCCTGAATACAATTCC---
Gharial CCAGGTGCCTTGTTTGGCCAAAGGGGAAGT---
GTTTCCTACCCTGAGTACAATTCC---
Crocodilus_nilo CCAGGTGCCTTGTTTGGCCAAAGGGGAAGT---
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Crocodilus_poro CCAGGTGCCTTGTTTGGCCAAAGGGGAAGT---
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Aspidoscelis ACAGGTTCT---TTTCATCAGAAGGGACAT---
GCCACCTACTCTGAAAAGAACTCT---
Shinisaurus TCAGGTTCT---TTAAATCACAGGGGACAT---
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Ophisaurus TCAGGTTCT---TTAAATCGCAGGGGACAT---
GCTGCCTATGCTGAAAATAACTCT---
Anolis TCTGGTTCT---TTCAATCAGAGGGAAATG---
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Eublepharis TCAGGTTAT---
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MournGekko TCAGGTTAT---TTTGGCCAGAGGGAACGT---
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Gekko_japon TCAGGTTAT---TTTGGCCAGAGGGAACGT---
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Python TCAGGTTCT---TTTCATCAGAGGGGACAT---
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Boa_constrictor TTGGGTTCT---TTTCATCAGCAGGGGACAT---
ACTACTTATGCTGATAAGAATTCT---
Vipera CCAGGTTCT---TTTCATCAGAGGGAACAT---
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Protobothrops CCAGATTCT---TTTCATCAAAGGGGACAT---
GCTACTTATTCTGACAAGAATTTT---
Crot_horrid CCAGATTCT---TTTCATCAAAGGGAACAT---
GCTACTTATTCTGACAAGAATTTT---
Crot_mitch CCAGATTCT---TTTCATCAAAGGGAACAT---
GCTACTTATTCTGACAAGAATTTT---
Thamnophis CCAGGTTCT---TTTCACCAGAGGGGACAT---
GCTACTTATTCTGATAAGAATTCT---
Cobra CCAGGTTCT---TTTCATCAGAGGGAACAT---
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Pantherophis CCAGATTCT---TTTCATCAGAGGGGACGT---
GCTACTTATTCCGATAAGAATTCT---
Pogona TTAGATTCT---ATTCATCAAAGGGGACAA---
GAAATCTATTCTGAAAGGAACTCTTTC

Allig_mississip -----
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Allig_sinensis -----

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Gharial -----
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Crocodilus_nilo -----
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Crocodilus_poro -----
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Aspidoscelis -----TATGGTCAACGTTCCCAATCATTTTATCCC-----
AGCCCATGGGAGGAT
Shinisaurus -----TATGGCCAACACACCCATTCTTTTTTCCC-----
AGAGCATGGGAAGAT
Ophisaurus -----TATGGCCAACATACCCAGTCCCTTTCCCC-----
AGCACATGGGAGGAT
Anolis -----TATAATCAATATACCCATCCCTTCCCTCCT-----
AGAGCATGGGAGGAC
Eublepharis -----TATGACCAACCTCCCCGATCCTTTTATCCT-----
GAAACATGGGAGGGG
MournGekko -----TATGCCAACCTCCCCGTTCTTTTATCCT-----
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Gekko_japon -----TATGCCAACCTCCCCGTTCTTTTATCCT-----
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Python -----TATAGCCAACAACACCTTCTTTTTATCCC-----
AGAGCATGGGAAGAC
Boa_constrictor -----TACAGCCAACAACCTCCTTCTTTTATCCC-----
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Vipera -----TACAGCCAGCAAGCTCCTTCTTTTATCCC-----
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Protobothrops -----TACAGCCAGCAAGCTCCTTCTTTTATCCT-----
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Crot_horrid -----TACAGCCAGCAAGCTCCTTCTTTTATCCT-----
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Crot_mitch -----TACAGCCAGCAAGCTCCTTCTTTTATCCT-----
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Thamnophis -----TACAGGGAAGAAGCTCCTTCTTTTATCCC-----
AGATTTTGGGATGAC
Cobra -----TACAGGCAGCAAGCTCCTTCTTTTATCCC-----
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Pantherophis -----TACAGGCAGCAAGCTCCTTCTTTTATCCC-----
AGATTTTGGGAGGAC
Pogona AGAAATCCCTACCAACAAAATGGTCATCCCAGTACTTCC-----
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Allig_mississip -----AACTCTCCT---
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Allig_sinensis -----AACTCTCCT---
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Gharial -----AACTCTCCT---

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 Crocodilus_nilo -----AACTCTCCT---
 GTGAGCCCAGAAGGACAACGTGGAAATTCCTGTATCCTCCT
 Crocodilus_poro -----AACTCTCCT---
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 Aspidoscelis
 AGAGAAAGTTCTCCCACAGTAGGTCCAGCAGACCAAAGAGAAAGACATTCATATTCTCCA
 Shinisaurus
 GGGGAAACTCGCCAACAATGGGCCACCAGTCCAAAGGGAAAGTCCATCATATTCTCCT
 Ophisaurus
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 Anolis
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 Eublepharis
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 MournGekko
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 Gekko_japon
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 Boa_constrictor
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 Vipera AAAGAGAACTTGCCCTACAATAGAACCTCTGGGGCAA-----
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 Croc_horrid AACAGAACTTGCCCTACAACAGAGCCTCTGGGGCAA-----
 AGAGGCTCTTATTCGCCC
 Croc_mitch AACAGAACTTGCCCTACAACAGAGCCTCTGGGGCAA-----
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 Thamnophis
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 Cobra
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 Pantherophis
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 Pogona
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 Allig_mississip -----
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 Allig_sinensis -----
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 Gharial -----
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 Crocodilus_nilo -----

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 Crocodilus_poro -----
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 Aspidoscelis
 CCACTGACATCAGATCAAATGCAAAGAAACATCTACCACAGAGAC-----ATTCCA
 Shinisaurus
 GCTTTGCCTTCAAATCAGATGCAAAGAAACACCTACCAAAGAAGT-----GCTCAG
 Ophisaurus
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 Anolis
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 Eublepharis -----
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 MournGekko
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 Gekko_japon
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 Python
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 Boa_constrictor
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 Vipera
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 Protobothrops
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 Croc_horrid
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 Croc_mitch
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 Thamnophis
 CTTTTGCCTTCAAGATCAAATGCACAGGAGCGAATATCATGAAAGC-----ATTCAA
 Cobra
 CTTTTGCCTTCAAGATCAAATGCACAGGAGCGAATATCATGGAAGC-----ATTCAG
 Pantherophis
 CTTTCACCTTCATATCAAATGCACAGGAGCGAATATCATGGAAGC-----ATTCAG
 Pogona
 ATATTGCCTTCAAATCAGATGCAGAAGAACCCTATCATAGAAGT-----GTTTCAG

 Allig_mississip CTAGGACCTGACTCTTAC---
 CCTGGACAAAGGACATGGGACCAGGAGCAGCCATTGCCT
 Allig_sinensis CTAGGACCTGACTCTTAC---
 CCTGGACAAAGGACATGGGACCAGGAGCAGCCATTGCCT
 Gharial CTAGGACCTGACTCTTAC---
 CCTAGACAAAGGATATGGGACCAGGAGCAGCCATTGCCT
 Crocodilus_nilo CTAAGACCTGACTCTTAC---
 CCTAGACAAAGGACATGGGACCAGGAGCAGCCATTGCCT
 Crocodilus_poro CTAAGACCTGACTCTTAC---

CCTAGACAAAGGACATGGGACCAGGAGCAGCCATTGCCT
Aspidoscelis TTGCAGCATGAACTATAT---
CACAAGCAGCATCCATGGACTGATGAGAAACAATTACTT
Shinisaurus CAGGAACATGAACCATAT---
GCCAGGCAAACCTAAGGACCCATGAAAACCATTTGCTT
Ophisaurus CAGGAACATGAACCATAT---
TCCAGGCAAATCTATGGACCCATGAAAACCGTTTCCTT
Anolis CCAGAGTATGAACCATAT---
CCCAGGCAAGATCCATGGACCCGTGAACAACACTTGCAT
Eublepharis CAGGAGAGCGAAATGTAT---
CCTAGGCCATCTCCATGGGCACAGGAGAAACATTTGCAT
MournGekko NNNNNNNNNNNNNNTAT---
CCCAGGCAAACCTCCATGGGCCCATGAAAACATTTGCTT
Gekko_japon NNNNNNNNNNNNNNTAT---
CCCAGGCAAACCTCCATGGGCCCATGAAAACATTTGCTT
Python
CAGGAGCATGAATTTTCATCAATCCAGGCAAATATATGGCCCCATGAAAACATTTGGCT
Boa_constrictor CAGGAGCATGAACTATAT---
TCCAGGCAAATATATGGCCCCATGAAAAGCATTTGGCT
Vipera CAGGAGAATGAACCATAT---
TCCAGGCAAATATATGGCCCCATGAAAACATTTGGCT
Protobothrops CAGGAGAATGAACTATAT---
TCCAGGCAAATATATGGCCCCATGAAAACATTTGGCT
Crot_horrid CAGGAGAATGAACTATAT---
TCCAGGCAAATATATGGCCCCATGAAAACATTTGGCT
Crot_mitch CAGGAGAATGAACTATAT---
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Thamnophis CAGGAGAATGAATTATAT---
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Cobra CAGGAGAATGAATTATAT---
TCCAGGCAAATATACAGCCCCATGAAAACATTTGGCT
Pantherophis CAGGAGAATGAATTATAT---
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Pogona CAGGAGCATGAAGCACAC---
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Allig_mississip
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Allig_sinensis
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Gharial
GAGGCAGAGGGCAGCCAGCCGGGCAATATGGAAACCCACAATACCTTCCAACAATCCG
Crocodilus_nilo
GAGGCAGAGGGCAGTCCAGCTGGGCAATATGGAAACCCACAATACCTTCCAAGCAATCCA
Crocodilus_poro
GAGGCAGAGGGCAGTCCAGCCGGGCAATATGGAAACCCACAATACCTTCCAAGCAATCCA
Aspidoscelis GACCTTGAC-----

AGACAGTACAGAAATGATCCATAC-----AGTCCA
Shinisaurus GATCTTGAC-----
AAACAGTATAGAAATCCTTCATAC-----AATCCA
Ophisaurus GATCTTGAC-----
AGACATTATAGAAATCCTCCATAT-----AATCCG
Anolis GATCCTGAC-----
AACCAGTACAGTAATTCTCCATAC-----AATCCA
Eublepharis GACCTGGAT-----
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MournGekko GACCAGGAC-----
AGGGAGTATAGAAACCCTCCCTAC-----AATCCA
Gekko_japon GACCAGGAC-----
AGGGAGTATAGAAACCCTCCCTAC-----AATCCA
Python GATCTTGAT-----
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Boa_constrictor GATCTTGAT-----
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Vipera GATCCTGAT-----
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Protobothrops GATCCTGAT-----
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Crot_horrid GATCCTGAT-----
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Crot_mitch GATCCTGAT-----
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Thamnophis GATCCTGAT-----
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Cobra GATCCTGAT-----
ATTCAATACCAAATCACCCTAT-----AATCCA
Pantherophis GATCCTGAC-----
ATACAATACCAAATCCTCCCTAT-----AATCCA
Pogona GATGTTGAC-----
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Allig_mississip
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Allig_sinensis
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Gharial
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Crocodilus_nilo
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Crocodilus_poro
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Aspidoscelis
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Shinisaurus

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Ophisaurus
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Anolis
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Eublepharis
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MournGekko
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Gekko_japon
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Python
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Boa_constrictor
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Vipera
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Protobothrops
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Crot_mitch
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Thamnophis
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Cobra
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Pantherophis AGT-----
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Pogona
CCTCAGTACCCCATGCATCCAAGATTTTCTACAGAACTCCACCCAAT---GAAAGAGAC

Allig_mississip
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Allig_sinensis
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Gharial
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Crocodilus_nilo
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Crocodilus_poro
TATTTCCCTTACGATGAAATCAGCCCCCTGGGCCCCAGAAGATAATTACCCTCTCTATAAA
Aspidoscelis
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Shinisaurus
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Ophisaurus

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Eublepharis
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MournGekko
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Gekko_japon
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Python AATTTGCCATATGAGGAGATTAACAGACGGATCCCA---
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Boa_constrictor AATTTGCCATATGAGGAAATTAACAGACAGATCCCA---
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Vipera AATTTGCCATATGAGGAAATTAACAGACAGATCCCA---
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Protobothrops AATTTGCCATATGAGGAAATGAACAGACAGATCCCA---
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Crot_horrid AATTTGCCATATGAGGAAATGAACAGACAGATCCCA---
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Crot_mitch AATTTGCCATATGAGGAAATGAACAGACAGATCCCA---
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Thamnophis
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Cobra AATTTGCCATATGAGGAAATTAATAGATGGATTCCA---
GAACATTCTCCAGTTCATGGT
Pantherophis AATTTGCCATATGAGGAAATTAACAGACGGATTCCA---
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Pogona
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Allig_mississip
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Allig_sinensis
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Crocodilus_poro
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Aspidoscelis GCAGAGCACTTAAGGCAAACAGAAGATATCCCATAT-----
CCAGTGTTTAGAGAA
Shinisaurus
GCAGAACACTTGAGGCACACAGAAAACATCCCATATCGTATGAACAATGTGTTTGGACAC
Ophisaurus
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Anolis

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Eublepharis
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MournGekko
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Gekko_japon
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Python TCAGAACAT-----
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Boa_constrictor CCAGAACAT-----
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Vipera TCAGAACAT-----
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Protobothrops TCAGAACAT-----
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Crot_horrid TCAGAACAT-----
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Crot_mitch TCAGAACAT-----
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Thamnophis CCAGAACAT-----
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Cobra TCAGAACAT-----
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Pantherophis TCAGAACAT-----
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Pogona
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Allig_mississip
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Allig_sinensis
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Gharial
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Crocodilus_nilo
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Crocodilus_poro
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Aspidoscelis AAG-----
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Shinisaurus AGA-----
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Ophisaurus CGA-----
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Anolis GGA-----
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Eublepharis CCA-----

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MournGekko CGA-----
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Gekko_japon CGA-----
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Python ACA-----
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Boa_constrictor ATA-----
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Vipera ACA-----
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Protobothrops ACA-----
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Crot_horrid ACA-----
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Crot_mitch ACA-----
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Thamnophis ATA-----
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Cobra CCA-----
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Pantherophis ACA-----
GAGAGGAATCCACGATACCCTGGACCATAACCCTCCA
Pogona AAA-----
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Allig_mississip CCTCAT-----
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Allig_sinensis CCTCAT-----
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Gharial CCTCAA-----
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Crocodilus_nilo CCTCAC-----
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Crocodilus_poro CCTCAC-----
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Aspidoscelis
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Shinisaurus
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Ophisaurus
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Anolis CAACAAAGGAACACT---
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Eublepharis
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MournGekko

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Gekko_japon
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Python
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Boa_constrictor
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Vipera
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Protobothrops
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Crot_horrid
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Crot_mitch
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Thamnophis
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Cobra
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Pantherophis
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Pogona
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Allig_mississip GATCCAGAA---
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Allig_sinensis GATCCAGAA---
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Gharial GATCCAGAA---
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Crocodilus_nilo GATCCAGAA---
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Crocodilus_poro GATCCAGAA---
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Aspidoscelis
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Shinisaurus
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Ophisaurus
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Anolis
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Eublepharis
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MournGekko
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Gekko_japon

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Python
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Boa_constrictor
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Vipera
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Protobothrops
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Crot_horrid
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Crot_mitch
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Thamnophis
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Cobra
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Pantherophis
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Pogona
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Allig_mississip

Allig_sinensis

Gharial

Crocodilus_nilo

Crocodilus_poro

Aspidoscelis CAAAAACACTTCAGAAGAAACCCA---
ACTGTTAGTGAAGGCAGAAAGGAAGTAATACCT
Shinisaurus TCCACAGACTTCAGAAGAAACCCA---
ACATATACAGAAGACACAGGGGGAGCCATACAT
Ophisaurus TCCACAGACTTCAGAAGAAACCCA---
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Anolis TCCACAGACTTCAGAGGAAATCCA---
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Eublepharis CCCCCTGACTTCAGAAGAAACCCA---
ACACATATGGAAGACACAAGG-----
MournGekko TCCCCGGATTCCAGAAGAAACCCA---
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Gekko_japon TCCCCGGATTCCAGAAGAAACCCA---
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Python TCCACAACTTCAGAAGAAACCCA---

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Boa_constrictor TCCACAAACTTCAGAAGAAACCCCT---
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Vipera TCCACAAACATCAGAAGAATCCCA---
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Protobothrops TCCACAAACATCAGAAGAAACCCA---
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Crot_horrid TCCACAAACATCAGAAGAAACCCA---
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Crot_mitch TCCACAAACATCAGAAGAAACCCA---
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Thamnophis TCCTCAAATATCAGAAGAAACCCA---
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Cobra TCTTCAAACATCAGAAGAAACCCA---
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Pantherophis TCCTCAAACATCAGAAGAAACCCA---
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Pogona
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Allig_mississip

Allig_sinensis

Gharial

Crocodilus_nilo

Crocodilus_poro

Aspidoscelis GGAAGTGTCCCCTTT-----

AATGATGCTGAAGGAAGAAGTTATGTGAACCCATTG

Shinisaurus

GTGAGCGCACCAATTTCCAATGTTAATGTTGCCGGAAGAAGACGTTATCCTGACACACTG

Ophisaurus

GCACGTGCACCAATTTCCAGTGTTAACATTGTTGGAAGAAGACGTTATCCTGACACAGTG

Anolis

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Eublepharis ---

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MournGekko ---

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Gekko_japon ---

GGTGCTCACATTTCCAGTGTTAACACTGCAGAAAGAAGAAATTATCCCGACAGACTG

Python

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Boa_constrictor

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Vipera
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Protobothrops
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Crot_mitch
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Thamnophis
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Cobra
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Pantherophis
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Pogona
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Allig_mississip -----
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Allig_sinensis -----
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Gharial -----
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Crocodilus_nilo -----
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Crocodilus_poro -----
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Aspidoscelis
GGATATCCAGATGACTATCCACCAGAACATAGAATTATGACATCACAATCTACTAATACC
Shinisaurus
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Ophisaurus
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Anolis
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Eublepharis
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MournGekko
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Gekko_japon
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Python
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Boa_constrictor
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Vipera GGA-----

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Protobothrops GGA-----
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Crot_horrid GGA-----
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Crot_mitch GGA-----
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Thamnophis GTA-----
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Cobra GTA-----
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Pantherophis GTA-----
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Pogona
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Allig_mississip
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Allig_sinensis
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Gharial
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Crocodilus_nilo
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Crocodilus_poro
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Ophisaurus
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Anolis
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Eublepharis
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MournGekko
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Gekko_japon
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Boa_constrictor
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Vipera
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Protobothrops

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Crot_mitch
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Thamnophis
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Cobra
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Pantherophis
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Pogona
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Allig_sinensis TAC---
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Gharial TAC---
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Crocodilus_nilo TAC---
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Crocodilus_poro TAC---
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Shinisaurus
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Ophisaurus
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Python ATT---
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Crot_horrid ATT---

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Shinisaurus GAG-----
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MournGekko
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Allig_sinensis TCTGGTCAAAAAAAGTTCCTGCGGCTTGAGAAA-----
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Aspidoscelis
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Shinisaurus ACTAATCAT-----
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Ophisaurus GCTAATCAT-----
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Anolis GCTAATAAT-----CCTCTGAAGAATGGGGGG-----
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Eublepharis TCT-----
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MournGekko TCT-----
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Gekko_japon TCT-----
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Boa_constrictor
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Vipera TCTAATCTTTGGAACAATTCTTTGAAGACT-----
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Protobothrops TCTAATATTTGGAACAATTCTTTGAAGTCT-----
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Crot_horrid TCTAATCTTTGGAACAATTCTCTGAAGTCT-----
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Pogona TCTAATTAT-----CCTTTCATGGTGGGCAA-----
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Crocodilus_poro
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Ophisaurus
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Eublepharis
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Gekko_japon
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Boa_constrictor
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Vipera
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Protobothrops
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Crot_mitch
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Gharial GTATTGGGCCAG---
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Gekko_japon
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Boa_constrictor
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Vipera
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Protobothrops
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Crot_mitch
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Cobra
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Pantherophis CTATTAGGCCTAACAAGT-----

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Pogona

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Allig_mississip

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Allig_sinensis

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Gharial

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Crocodilus_nilo

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Crocodilus_poro

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Aspidoscelis

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Shinisaurus

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Ophisaurus

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Anolis

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Python

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Boa_constrictor

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Vipera

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Protobothrops

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Crot_horrid

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Crot_mitch

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Cobra

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Pantherophis

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Pogona

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Allig_sinensis
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Crocodilus_poro
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Aspidoscelis ATTCTAGGATCAAATCAA-----
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Shinisaurus ATTGTGGGAGCAAATCAG-----
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Ophisaurus ATCGTGGGAACAAATCAT-----
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MournGekko ATCATT-----CAG-----
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Gekko_japon ATCATT-----CAG-----
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Boa_constrictor ATCATGGGGGTGAATCAG-----
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Vipera ATCGTGGAGGTAAATCAG-----
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Pantherophis ATTGTGGAGGTAAATCAG-----
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Pogona ATCATGGGGGAAAGTGAG-----
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 Allig_sinensis ---
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 Ophisaurus ---
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 Anolis ---
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 MournGekko
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 Gekko_japon
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 Pantherophis ---GCAGCTTTA-----
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 Pogona ---
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Allig_sinensis ACTTTAGGCAGCAAAGTTGATATGAAAGAA-----
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 Gharial ACTTTAGGCAGCAAAGCTGATATGAAAGAA-----
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 Crocodilus_nilo ACTTTAGGCAGCAAAGCTGATATGAAAGAA-----
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Gharial

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Crocodilus_nilo

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Crocodilus_poro

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Aspidoscelis

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Shinisaurus

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Ophisaurus

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Anolis

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MournGekko

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Gekko_japon

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Python

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Boa_constrictor

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Vipera

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Protobothrops

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Crot_horrid

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Allig_mississip

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Allig_sinensis

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Gharial

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Crocodylus_nilo
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Crocodylus_poro
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Aspidoscelis CAACAGAACAACCTTATTTAATGCAGAAAGC-----
CCAACACCCACCGGAAAGCTGAAC
Shinisaurus
CAACAGCACGACCTATTT-----
Ophisaurus CAACAGCATGACCTCTTTTATGGAGAGGAT-----
CCAGTGCCCACTGGAAAGCCAGAC
Anolis CAACAGCGTGATCCATTTTACGGAGAGAAT-----
CCAGTCCCAACTGAAAGGCCAAAT
Eublepharis AACAGCAAGACCTGTTTTATGCGGAGAAT-----
CCCATGCTCATCGGAAAGTCGTTT
MournGekko ACACAGCAAGATCTATTTTATGCAGAGAAT-----
CCTGCACTCATTGGACAATCCTAC
Gekko_japon ACACAGCAAGATCTATTTTATGCAGAGAAT-----
CCTGCACTCATTGGACAATCCTAC
Python CAGCCTTCTGGTGTCTTTTATGCAGAGCAT-----
TCAATGCATGCTGGAAAACCGATC
Boa_constrictor CAACTTCTGATGTCTTTTATGCAGAAAAT-----
TCAATGCATGCTGGAAAACCAATC
Vipera CAATCTTCTGATATCTTTTATGCAGAGAAT-----
TCAATGCAGGCTGGAAAACCTATC
Protobothrops CAATCTTCTGATATCTTTTATGCAGAGAAT-----
TCAATGCAGCCTGGAAAACCTATC
Crot_horrid CAATCTTTGATATCTTTTATGCAGAGAAT-----
TCAATGCAGGCTGGAAAACCTATC
Crot_mitch CAATCTTCTGATATCTTTTATGCAGAGAAT-----
TCAATGCAGGCTGGAAAACCTATC
Thamnophis CAACCTTCTGATATCTTTTATTTAGAGAAT-----
TCAATGCATGCTGGAAAACCTATC
Cobra CAGCCTTCTGATGTCTTTTATTTAGAGAAT-----
TCAATGCATGCTGGAAAACCTATC
Pantherophis CAACCTTCTGATGTCTTTTATTTAGAGAAT-----
TCAATGCATGCTGGAAAACCTATC
Pogona CAACAGCACAAATCTTTTCATGGAGAGACT-----
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Allig_mississip
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Allig_sinensis
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Gharial
CTTCAGTTGGAAACAGAGGCAAAGATCCCAAGTGCTGAGCCACCAAACGGAGTC-----
Crocodylus_nilo
CTCCAGTTGGAAACAGAGGCAAAGATCCCAAGTGCTGAGCCGCAAACGGAGTC-----

Crocodilus_poro
 CTCAGTTGGAAACAGAGGCCAAAGATCCCAAGTGCTGAGCCGCCAAACGGAGTC-----
 Aspidoscelis
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 Shinisaurus

 Ophisaurus
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 Anolis
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 Eublepharis
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 MournGekko
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 Gekko_japon
 GTCATATTGCCCGAGCCACATCCCCTGTCCAGCACTGATCCTTCTTATGACACAGAAGAG
 Python ---
 ATGCTACCTGAACCCAGCCAATCTCTAGCACAGTTCATCCCACAGTATAGGAGAA
 Boa_constrictor
 ACCATGCTGCCTGAACCCAGCCAATCTCTAGTACAGTTCATCCCATGATATA---GAA
 Vipera ---
 ATGCTGCCTGAACCCCAACCAATGACTAGCACAGTCCATCTCAAGATGTAGGAGAA
 Protobothrops ---
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 Croc_horrid ---
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 Croc_mitch ---
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 Thamnophis ---
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 Cobra ---
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 Pantherophis ---
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 Pogona
 GACATGCCACCTGAATCAAAGCCCATCTCTAGCACTAATCCATCTCATGATGATCGAGAA

 Allig_mississip -----
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 Allig_sinensis -----
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 Gharial -----
 AGCTCTCTAACAGGAGGCATGGCAAATGATTCAGAGGAAAGG
 Crocodilus_nilo -----
 AGCTCTCTAACAGGAGGCATGGCAAATGATTTAGAGGAAAGG
 Crocodilus_poro -----
 AGCTCTCTAACAGGAGGCATGGCAAATGATTCAGAGGAAAGG

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Aspidoscelis      ---
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Shinisaurus
-----
Ophisaurus       ---
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Anolis           ---
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Eublepharis     ---
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MournGekko      ---
AAACCCTTAACGCCAGTTCTCTGGGAGAAGATCTGGCTGATCAACCAAATGAAAGG
Gekko_japon     ---
AAACCCTTAACGCCAGTTCTCTGGGAGAAGATCTGGCTGATCAACCAAATGAAAGG
Python           ---GATCATATAAAAATTCAGTACCCCA---
GAAGAATTGGTGGGACAACCAAATGAAAGG
Boa_constrictor ---GATCAATTAATAATTCAGTTCCCA---
GAAGAATTGGTGGGACAACCAAATGAAAGG
Vipera          ---GATCAATTAATAACTCACTTCTCCA---
GAAGAACAGGTGGGACAACCAAATGAAAGG
Protobothrops   ---GATCAATTAATAACTCACTTCTCCA---
GAAGAACAGGTGGGACAACCAAATGAAAGG
Crot_horrid     ---GATCAATTAATAACTCACTTCTCCA---
GAAGAACAGGTGGGACAACCAAATGAAAGG
Crot_mitch     ---GATCAATTAATAACTCACTTCTCCA---
GAAGAACAGGTGGGACAACCAAATGAAAGG
Thamnophis     ---GATCAATTAATAACTCACTTCTCCA---
GGAGAACAGGTGGGACAACCAAATGAAGGA
Cobra           ---GATCAATTAATAACTCACTTCTCCA---
GAAGAACAGATGGGACAACCAAATGAAAGG
Pantherophis   ---GATCAATTAATAACTCACTTCTCCA---
GAAGAACAGGTGGGACAACCAAATGAAAGG
Pogona
GAAAACACCTGAAATTTGGTTCTCCAGGAGAAGAATGGGTAGAGCGACCAAATGAAACA

Allig_mississip AGACCAGACTGTCTACTACTGCAAAAC---
Allig_sinensis  AGACCAGACTGTCTACTACTGCAAAAC---
Gharial         AGACCAGACTGTCTACTACTGCAAAAC---
Crocodilus_nilo AGACCAGACTGTCTACTACTGCAAAAC---
Crocodilus_poro AGACCAGACTGTCTACTACTGCAAAAC---
Aspidoscelis   GTGCCAGATTGTTTCTGCTCCAGAACAAA
Shinisaurus    -----
Ophisaurus     ATACCTGACTGTTTACTGCTCCAAAACAAA
Anolis         ACTCCAGACTGCTTACTTCTCCAAAAGAAA
Eublepharis    ACACCAGACTGTTTGCTGCTCCAAAAA---
MournGekko     ACATCAGACTGTTTACTTCTCCAGAAA---
Gekko_japon    ACATCAGACTGTTTACTTCTCCAGAAA---

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Python	ACAACAGATTGTTTACTACTCCGAAATAAG
Boa_constrictor	ATAACAGATAGTTTACTACTCCAAAATAAG
Vipera	ACAACAGATTGTTTACTCCTCCATGAG---
Protobothrops	ACAACAGATTGTTTACTCCTCCATGAG---
Crot_horrid	ACAACAGATTGTTTACTCCTCCATGAG---
Crot_mitch	ACAACAGACTGTTTACTCCTCCATGAG---
Thamnophis	ACAATAGATTGTTTAGTCCTCCAAAATGAG
Cobra	ACAACAGATTGTTTACTCTTCCAAAATGAG
Pantherophis	ACAACAGATTGTTTACTCCTCCATGAG---
Pogona	ACACCAGACTGTTTACTGCTCCAAAAGAAA