

**Additional File 18. List of 91 unique TF decoy oligonucleotides (dODNs).** A literature review identified 167 dODNs used and validated in prior studies. These were screened to exclude redundant dODNs with the same sequence, yielding a set of 91 unique dODNs listed in the table below. For those dODNs reported by multiple publications, the table below lists the earliest publication in which the dODN sequence was reported.

| Target (PubMed ID) | Sense Sequence (5'-3')                        | Antisense Sequence (5'-3')                      | Reference   |
|--------------------|---|---|---|
| AGF2 (8613193)     | CCCAGCCTCTGTACAGAGTAGCCC<br>A                 | TGGGCTACTCTGTACAGAGGCT<br>GGG                   | Morishita et al. 1996, Hypertension<br>27:502-7                             |
| AGF3 (8613193)     | AGGGGATAGCTGTGCTTGTCTAGG<br>TT                | AACCTAGACAAGCACAGCTATC<br>CCCT                  | Morishita et al. 1996, Hypertension<br>27:502-7                             |
| AP1 (10918504)     | AGCTTGTGAGTCAGAAGCT                           | AGCTTCTGACTCACAAGCT                             | Tomita et al. 2000, Gene Ther<br>7:1326-32                                  |
| AP1 (11024008)     | CGCTTGATGACTCAGCCGGAA                         | TTCCGGCTGAGTCATCAAGCG                           | Viedt et al. 2000, FASEB J<br>14:2370-2                                     |
| AP1 (11895002)     | GATCCTGTACAGGATGTTCTAGCT<br>ACA               | TGTAGCTAGAACATCCTGTACA<br>GGATC                 | Yoshimura et al. 2001, Gene Ther<br>8:1635-42                               |
| AP1 (12089071)     | GGATCCATGACTCAGAAGACGAC<br>ACACGTCTTCTGAGTCAT | ATGACTCAGAAGACGTGTGTGTCG<br>TCTTCTGAGTCATGGATCC | Ahn et al. 2002, Circ Res 90:1325-<br>32                                    |
| AP1 (12089071)     | AGCTTGTGACTCAGAAGCT                           | AGCTTCTGAGTCACAAGCT                             | Ahn et al. 2002, Circ Res 90:1325-<br>32                                    |
| AP1 (12089071)     | GGATCCAAATCTCAGAAGACGAC<br>ACACGTCTTCTGAGATTT | AAATCTCAGAAGACGTGTGTGTCG<br>TCTTCTGAGATTTGGATCC | Ahn et al. 2002, Circ Res 90:1325-<br>32                                    |
| AP1 (17890327)     | GGAACATGAGTTCATCTATTTC                        | GAAATAGATGAACTCATGTTCC                          | Vayalil et al. 2007, Am J Physiol<br>Lung Cell Mol Physiol 293:L1281-<br>92 |
| AP1 (18458670)     | TGTCTGACTCATGTC                               | GACATGAGTCAGACA                                 | Moriyama et al. 2008, Lab Invest<br>88:652-63                               |
| AP1 (22258905)     | AAACATATGATTCACCAGGCA                         | TGCCTGGTGAATCATATGTTT                           | Börner et al. 2012, Mol Pharmacol<br>81:587-97                              |
| AP1 (22258905)     | TTACCTATGAGTTATCTGTTT                         | AAACAGATAACTCATAGGTAA                           | Börner et al. 2012, Mol Pharmacol<br>81:587-97                              |
| AP1 (22772035)     | TGTGATGACTCAGGTTTG                            | CAAACCTGAGTCATCACA                              | Finotti et al. 2012, Artif DNA PNA<br>XNA 3:97-296                          |
| AP1 (23223130)     | GTGTCTGACTCATGTACTGTCTTA<br>CCTCATGTC         | GACATGAGGTAAGACAGTACAT<br>GAGTCAGACAC           | Yuan et al. 2013, J Invest Dermatol<br>133:1080-7                           |
| C/EBP (12067903)   | TGCAGATTGCGCAATCTGCA                          | TGCAGATTGCGCAATCTGCA                            | Kelkenberg et al. 2002,<br>Arterioscler Thromb Vasc Biol                    |

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|------------------|--|--|---|
|                  |  |  | 22:949-54                                       |
| C/EBP (22851691) | TGCAGATTGCACAATCTG                       | CAGATTGTGCAATCTGCA                       | Jung et al. 2012, Mol Cell Biol 32:3938-48      |
| CHOP (22772035)  | CGCTGGTGTGATGCACGG                       | CCGTGCATCACACCAGCG                       | Finotti et al. 2012, Artif DNA PNA XNA 3:97-296 |
| CREB (22772035)  | AAAAC TTTCGTCATACTC                      | GAGTATGACGAAAGTTTT                       | Finotti et al. 2012, Artif DNA PNA XNA 3:97-296 |
| CREB (23825534)  | TGACGTCATGACGTCATGACGTCA                 | TGACGTCATGACGTCATGACGTCA                 | Chou et al. 2013, PLoS ONE 8:e66268             |
| CREB (23840351)  | TGACGTCAGAGAGCGCTCTCTGACGTCA             | TGACGTCAGAGAGCGCTCTCTGACGTCA             | Wang et al. 2013, PLoS ONE 8:e65661             |
| E2F (9691019)    | CTAGATTTCCCGCG                           | CGCGGAAATCTAG                            | Tomita et al. 1998, Am J Physiol 275:F278-84    |
| E2F (12457282)   | GGATCCGTTTCGCGCTATTGCAAAAGCAATAGCGCGAAAC | GTTTCGCGCTATTGCTTTTGCAATAGCGCGAAACGGATCC | Ahn et al. 2002, Gene Ther 9:1682-92            |
| E2F (12457282)   | ATTTAAGTTTCGCGCCCTTTCTC                  | GAGAAAGGGCGCGAAACTTAAAT                  | Ahn et al. 2002, Gene Ther 9:1682-92            |
| EGR-1 (14712296) | CCGAGAGCGGGGGCGAGCGTG                    | CACGCTCGCCCCGCTCTCGG                     | Ohtani et al. 2004, Gene Ther 11:126-32         |
| EGR-1 (22906951) | GGATCCAGCGGGGGCGAGCGGGGGCGGA             | TCGCCCCGCTCGCCCCGCTGATCC                 | Cattaruzza et al. 2012, FASEB J 26:4864-75      |
| ETS1 (17885220)  | AATTCACCGGAAGTATTCGA                     | TCGAATACTTCCGGTGAATT                     | Miyake et al. 2007, Circ Res 101:1175-84        |
| HIF1 (14980978)  | GCCCTACGTGCTGTCTCA                       | TGAGACAGCACGTAGGGC                       | Yang et al. 2004, Br J Pharmacol 141:988-96     |
| HSF1 (11423124)  | CTAGAAGCTTCTAGAAGCTTCTAG                 | CTAGAAGCTTCTAGAAGCTTCTAG                 | Ianaro et al. 2001, FEBS Lett 499:239-44        |
| IRF1 (10620190)  | ATATTTCACTTTTATAATGGAAAAATTC             | GAATTTTCCATTATGAAAGTGAATAT               | Amoah-Apraku et al. 2000, Kidney Int 57:83-91   |
| IRF1 (11781233)  | GGAAGCGAAAATGAAATTGAC                    | GTCAATTTCAATTTTCGCTTCC                   | Wagner et al. 2002, Blood 99:520-5              |
| MAZ (21931711)   | CGAGGCCGGGGCGGGGGCGGGGGCGGGGGCGCGCGGT    | ACCGCGCGCCCCGCCCCGCCCGCCCCGGCCTCG        | Membrino et al. 2011, PLoS ONE 6:e24421         |
| MAZ (21931711)   | CGGCTCGGGTTGCGGGCGCAGGGCACGGGCGGC        | GCCGCCCGTGCCCTGCGCCCGCAACCCGAGCCG        | Membrino et al. 2011, PLoS ONE 6:e24421         |
| MAZ (21931711)   | TCGGGTTGCGGGCGCAGGGCACG                  | CGCCCGTGCCCTGCGCCCGCAA                   | Membrino et al. 2011, PLoS ONE                  |

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|-------------------|--------------------------------------|--------------------------------------|--|
|                   | GGCG                                 | CCCGA                                | 6:e24421   |
| MAZ (21931711)    | TCGGGTTGCGGGCGCAGGGCACG<br>GGCGG     | CCGCCGTGCCCTGCGCCGCA<br>ACCCGA       | Membrino et al. 2011, PLoS ONE<br>6:e24421         |
| MAZ (21931711)    | CGGGGCGGGGCGGGGGCGGGGGC<br>G         | CGCCCCGCCCCGCCCCGCC<br>CG            | Membrino et al. 2011, PLoS ONE<br>6:e24421         |
| MAZ (21931711)    | GCGGTGTCGCAAGACGCAAGACG<br>CGGAGGCAG | CTGCCTCCGCGTCTTGCGTCTTG<br>CGACACCGC | Membrino et al. 2011, PLoS ONE<br>6:e24421         |
| MAZ (23471001)    | GCGGTGTGGGAAGAGGGAAGAGG<br>GGGAGGCAG | CTGCCTCCCCCTCTTCCCTCTTC<br>CCACACCGC | Cogoi et al. 2013, Nucleic Acids<br>Res 41:4049-64 |
| MAZ (23471001)    | GCGGTGTGGAAAGAGGGAAGAGG<br>GGGAGGCAG | CTGCCTCCCCCTCTTCCCTCTTT<br>CCACACCGC | Cogoi et al. 2013, Nucleic Acids<br>Res 41:4049-64 |
| MAZ (23471001)    | GCGGTGTGGGAAGAGGGGGGGA<br>GGCAG      | CTGCCTCCCCCCCCCTTCCAC<br>ACCGC       | Cogoi et al. 2013, Nucleic Acids<br>Res 41:4049-64 |
| MAZ (23471001)    | GCGGTGTGGGGGGAAGAGGGGGA<br>GGCAG     | CTGCCTCCCCCTCTTCCCCCAC<br>ACCGC      | Cogoi et al. 2013, Nucleic Acids<br>Res 41:4049-64 |
| MAZ (23471001)    | GCGGTGTGGGGGGGGGAGGCAG               | CTGCCTCCCCCCCCCACACCG<br>C           | Cogoi et al. 2013, Nucleic Acids<br>Res 41:4049-64 |
| MAZ (23471001)    | GCGGTGTCGCAAGACGCAAGACG<br>CGGAGGCCG | CGGCCTCCGCGTCTTGCGTCTTG<br>CGACACCGC | Cogoi et al. 2013, Nucleic Acids<br>Res 41:4049-64 |
| NFAT (22906951)   | CGCCAAAGAGGAAAATTTGTTTC<br>ATA       | TATGAAACAAATTTCTCTTTG<br>GGCG        | Cattaruzza et al. 2012, FASEB J<br>26:4864-75      |
| NF-IL6 (22772035) | CATCAGTTGCAAATCGTGG                  | CCACGATTTGCAACTGATG                  | Finotti et al. 2012, Artif DNA PNA<br>XNA 3:97-296 |
| NFkB (10341880)   | CCTTGAAGGGATTTCCCTCC                 | GGAGGGAAATCCCTTCAAGG                 | Kawamura et al. 1999, Gene Ther<br>6:91-7          |
| NFkB (10744638)   | AGTTGAGGGGACTTTCCAGGC                | GCCTGGGAAAGTCCCCTCAACT               | Vos et al. 2000, FASEB J 14:815-<br>22             |
| NFkB (10864580)   | CTTGAAGGGATTTCCCTCC                  | GGAGGGAAATCCCTTCAAG                  | Tomita et al. 2000, J Am Soc<br>Nephrol 11:1244-52 |
| NFkB (10933964)   | AGGGACTTTCCGCTGGGGACTTTC<br>C        | GGAAAGTCCCCAGCGGAAAGTC<br>CCT        | Giannoukakis et al. 2000, Mol<br>Ther 1:430-7      |
| NFkB (11083494)   | GATCGAGGGGACTTTCCCTAGC               | GCTAGGGAAAGTCCCCTCGATC               | D'Acquisto et al. 2000, Gene Ther<br>7:1731-7      |
| NFkB (17328896)   | CTGGAAAGTCCCTCGAAGAGGGA<br>CTTTCCAG  | CTGGAAAGTCCCTCTTCGAGGG<br>ACTTTCCAG  | Laguillier et al. 2007, FEBS Lett<br>581:1143-50   |
| NFkB (22258905)   | AAAAAAAAGGGACTTTCATTGTAC             | ACCAGTACAATGAAAGTCCCTT               | Börner et al. 2012, Mol Pharmacol                  |

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|-----------------|--|--|---|
|                 | TGGT   | TTTTTT   | 81:587-97   |
| NFkB (22258905) | GTGGGAGGGGGCTATACGCAGAG<br>G                     | CCTCTGCGTATAGCCCCCTCCC<br>AC                   | Börner et al. 2012, Mol Pharmacol<br>81:587-97                              |
| NFkB (22772035) | AGAGGAATTTCCACGATT                               | AATCGTGGAAATTCCTCT                             | Finotti et al. 2012, Artif DNA PNA<br>XNA 3:97-296                          |
| NFkB (23056313) | GATCGAGGGGACTTTCCCTAG                            | CTAGGGAAAGTCCCCTCGATC                          | Ungaro et al. 2012, PLoS ONE<br>7:e46457                                    |
| NRF2 (24949080) | CTAATGGTGACAAAGCAACTTT                           | AAAGTTGCTTTGTCACCATTAG                         | Qi et al. 2014, Evid Based<br>Complement Alternat Med<br>2014:945814        |
| NRSF (21905079) | GGAGCTGTCCACAGTTCTGAA                            | TTCAGAACTGTGGACAGCTCC                          | McClelland et al. 2011, Ann<br>Neurol 70:454-64                             |
| SMAD (17890327) | GGGAGAGACAGACACAGGCAG                            | CTGCCTGTGTCTGTCTCTCCC                          | Vayalil et al. 2007, Am J Physiol<br>Lung Cell Mol Physiol 293:L1281-<br>92 |
| SMAD (23223130) | GTCTGAGCCAGACATAGTGATGCA<br>GACATACTC            | GAGTATGTCTGCATCACTATGT<br>CTGGCTCAGAC          | Yuan et al. 2013, J Invest Dermatol<br>133:1080-7                           |
| SMAD (23791891) | CTGTAACAAAAGTTACAGACCGA<br>ACAGAAAAGTTCGGT       | ACCGAACAGTTTTCTGTTCGGT<br>CTGTAACTTTTGTTACAG   | Sung et al. 2013, Exp Mol Pathol<br>95:136-43                               |
| SMAD (23791891) | GTAACCAAGCCAGACATTGAAAA<br>CAATGTCTGGCTT         | AAGCCAGACATTGTTTTCAATG<br>TCTGGCTTGGTTAC       | Sung et al. 2013, Exp Mol Pathol<br>95:136-43                               |
| SP1 (15342415)  | ATTCCGGGGGCGGGGGCATG                             | CATGCCCCCGCCCCGGAAT                            | Uchida et al. 2004, Cancer Res<br>64:6271-9                                 |
| SP1 (17890327)  | GTGGGTGGGGCTGGAACAT                              | ATGTTCCAGCCCCACCCAC                            | Vayalil et al. 2007, Am J Physiol<br>Lung Cell Mol Physiol 293:L1281-<br>92 |
| SP1 (22023388)  | ATTACGAGGCGGGGGGCTAC                             | GTAGCCCCCGCCTCGTAAT                            | Li et al. 2012, Biochem J 441:859-<br>67                                    |
| SP1 (22906951)  | ATTCGATCGGGGCGGGGCGAGC                           | GCTCGCCCCGCCCCGATCGAAT                         | Cattaruzza et al. 2012, FASEB J<br>26:4864-75                               |
| SP1 (23338822)  | GCCCCGATCTTTTGATCGGGGCGG<br>GGCGAGCTTTTGCTCGCCCC | GGGGCGAGCAAAGCTCGCCCC<br>GCCCCGATCAAAGATCGGGGC | Deng et al. 2013, Mol Med Rep<br>7:785-90                                   |
| SP1 (23791891)  | CCCCAACAAAAGTTGGGGCGGGG<br>ACAGAAAAGTTCCTCCG     | CGGGGACAGTTTTCTGTCCCCG<br>CCCCAACTTTTGTGGGG    | Sung et al. 2013, Exp Mol Pathol<br>95:136-43                               |
| SP1 (23791891)  | GGTTACAGGGGCGGGGTTCAAAA<br>GAACCCCGCCCCT         | AGGGGCGGGGTTCTTTTGAACC<br>CCGCCCTGTAACC        | Sung et al. 2013, Exp Mol Pathol<br>95:136-43                               |

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|------------------------|--|---|--|
| STAT1 (10432321)       | ATATTCCTGTAAGTG  | CACTTACAGGAATAT                                       | Huang et al. 1999, Biochem J 342:231-8                 |
| STAT1 (11781233)       | CATGTTATGCATATTCCTGTAAGTG                              | CACTTACAGGAATATGCATAACATG                             | Wagner et al. 2002, Blood 99:520-5                     |
| STAT1 (17981315)       | TGTGAATTACCGGAAGTG                                     | CACTTCCGGTAATTCACA                                    | Wagner et al. 2008, J Allergy Clin Immunol 121:158-165 |
| STAT3 (10432321)       | GATCCTTCTGGGAATTCCTAGATC                               | GATCTAGGAATTC CAGAAGGATC                              | Huang et al. 1999, Biochem J 342:231-8                 |
| STAT3 (17683579)       | CATTTCCCGTAAATC  | GATTTACGGGAAATG                                       | Zhang et al. 2007, BMC Cancer 7:149                    |
| STAT3 (21486470)       | CATTTCCCGTAAATCGAAGATTTACGGGAAATG                      | CATTTCCCGTAAATCTTCGATTTACGGGAAATG                     | Souissi et al. 2011, BMC Cell Biol 12:14               |
| STAT3 (22423663)       | TATTTCCCCTAAATGGAACATTTAGGGGAAATA                      | TATTTCCCCTAAATGTTCCATTTAGGGGAAATA                     | Souissi et al. 2012, Mol Cancer 11:12                  |
| STAT3 (22423663)       | CATTTCCCCTAAATCGAAGATTTAGGGGAAATG                      | CATTTCCCCTAAATCTTCGATTTAGGGGAAATG                     | Souissi et al. 2012, Mol Cancer 11:12                  |
| STAT3 (22423663)       | GCTTTCCCCTAAATGGAACATTTAGGGGAAAGC                      | GCTTTCCCCTAAATGTTCCATTTAGGGGAAAGC                     | Souissi et al. 2012, Mol Cancer 11:12                  |
| STAT3 (22719020)       | CATTTCCCGTTAATC  | GATTAACGGGAAATG                                       | Sen et al. 2012, Cancer Discov 2:694-705               |
| STAT5 (21091189)       | AGATTTCTAGGAATTCAAATC                                  | GATTTGAATTCCTAGAAATCT                                 | Wang et al. 2011, DNA Cell Biol 30:71-8                |
| STAT5 (23146666)       | GATCGCATTTCGGAGAAGACG                                  | CGTCTTCTCCGAAATGCGATC                                 | Busch-Dienstfertig et al. 2012, Mol Pain 8:83          |
| STAT6 (23146666)       | GATCCTACTTCATGGAAGAAT                                  | ATTCTTCCATGAAGTAGGATC                                 | Busch-Dienstfertig et al. 2012, Mol Pain 8:83          |
| ARNTL/CLOCK (23291558) | TTTAGCCACGTGACAGTGTAACGACACGTGGGCCCTCAAGTCCACGTGCAGGGA | TCCCTGCACGTGGACTTGAGGGCCCACGTGTCGTTACACTGTCCGTGGCTAAA | Xu et al. 2013, Toxicol Sci 132:368-78                 |
| AP1/SMAD (23223130)    | GTGTCTGCATGACTCAGCCAGACATGAGGTAAC                      | GTTACCTCATGTCTGGCTGAGTCATGCAGACAC                     | Yuan et al. 2013, J Invest Dermatol 133:1080-7         |
| AP1/SMAD (23223130)    | GTGACTCATGCAGACATGAGGTAA GCCAGACAC                     | GTGTCTGGCTTACCTCATGTCTGCATGAGTCAC                     | Yuan et al. 2013, J Invest Dermatol 133:1080-7         |
| AP1/SMAD (23223130)    | GATGCAGACATGAGGTAAGCCAGACATGACTCAC                     | GTGAGTCATGTCTGGCTTACCTCATGTCTGCATC                    | Yuan et al. 2013, J Invest Dermatol 133:1080-7         |
| AP1/SMAD               | GAGCCAGACATGAGTCATGTCTGC                               | GTGAGGTAATGCAGACATGACT                                | Yuan et al. 2013, J Invest Dermatol                    |

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|------------------------------|---|---|--|
| (23223130)                   | ATTACCTCAC                                | CATGTCTGGCTC                            | 133:1080-7                                       |
| cMYC/Oct4/Sox2<br>(24040121) | CATTGTTGCATTACAATGCTAATA<br>GCACGTG       | CACGTGCTATTAGCATTGTAAT<br>GCAACAATG     | Wang et al. 2013, PLoS ONE<br>8:e73942           |
| E2F/NFkB (18515844)          | GAAGGGATTTCCCTCCATTTCCCG<br>CGGA          | TCCGCGGGAAATGGAGGGAAA<br>TCCCTTC        | Miyake et al. 2008, Cardiovasc<br>Res 79:706-14  |
| E2F/NFkB/STAT3<br>(16936227) | TCTGAGCTTCTGGGAACTTGGGGA<br>CTTTCGCGCCCTA | TAGGGCGCGAAAGTCCCAAGT<br>TCCAGAAGCTCAGA | Gao et al. 2006, Mol Pharmacol<br>70:1621-9      |
| ETS1/NFkB<br>(14662712)      | ACCGGAAGTATGAGGGATTTCCCT<br>CC            | GGAGGGAAATCCCTCATACTTC<br>CGGT          | Nakashima et al. 2004, Circulation<br>109:132-8  |
| SMAD/SP1 (23791891)          | CAATGTCTGACTTGGTTACAGGGG<br>CGGGGTTCAAG   | CTTGAACCCCGCCCCTGTAACC<br>AAGTCAGACATTG | Sung et al. 2013, Exp Mol Pathol<br>95:136-43    |
| STAT1/STAT3<br>(23146666)    | GATCGAGTTTACGAGAACTC                      | GAGTTCTCGTAAACTCGATC                    | Busch-Dienstfertig et al. 2012, Mol<br>Pain 8:83 |