

Supplementary Information

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Table S1

Strains	Drug treatments (μM)	Mean lifespan \pm s.e.m. (days)	% Change in mean lifespan	75th percentile (days)	N	<i>P</i>
N2	DMSO control *	18.07 \pm 0.64	-	21	64/72	-
	Celecoxib (2)	20.29 \pm 0.75	12.3%	25	56/72	0.022
	Celecoxib (10) *	21.22 \pm 0.84	17.4%	25	50/72	0.0037
	Celecoxib (50)	19.28 \pm 0.78	6.7%	23	55/72	0.090
N2	DMSO control	17.15 \pm 0.50	-	21	64/72	-
	Celecoxib (0.5)	18.17 \pm 0.45	5.9%	19	54/72	0.36
	Celecoxib (2)	18.94 \pm 0.53	10.4%	21	58/72	0.029
	Celecoxib (10)	20.59 \pm 0.59	20.1%	23	54/72	<0.0001
	Celecoxib (50)	18.35 \pm 0.62	7.0%	21	55/72	0.10
N2 at 15°C	DMSO control	24.04 \pm 0.69	-	28	61/72	-
	Celecoxib (2)	27.65 \pm 0.82	15.0%	30	59/72	0.001
N2	DMSO control *	16.52 \pm 0.40	-	19	74/90	-
	Celecoxib (2) * Adult only	19.73 \pm 0.61	19.4%	24	69/90	<0.0001
N2	DMSO control *	18.95 \pm 0.62	-	21	54/72	-
	Celecoxib (2) * Adult only	22.03 \pm 0.65	16.3%	26	40/66	0.001
<i>daf-16 (mu86)</i>	DMSO control *	15.80 \pm 0.40	-	19	43/90	-
	Celecoxib (2) * Adult only	15.73 \pm 0.43	-0.4%	19	46/91	0.96
<i>daf-2 (e1370)</i>	DMSO control *	45.98 \pm 1.54	-	53	56/72	-
	Celecoxib (2) * Adult only	47.04 \pm 1.47	2.3%	55	59/72	0.75
N2	DMSO control	16.68 \pm 0.47	-	20	65/72	-
	Celecoxib (2) Adult only	19.28 \pm 0.54	15.6%	22	68/72	0.0002
<i>daf-16 (mu86)</i>	DMSO control	15.03 \pm 0.41	-	17	74/90	-
	Celecoxib (2) Adult only	15.57 \pm 0.39	3.6%	19	80/90	0.40
N2	DMSO control *	16.28 \pm 0.55	-	20	63/72	-
	Celecoxib (2) * Adult only	19.56 \pm 0.66	20.3%	24	62/72	0.0002
<i>eat-2(ad1116)</i>	DMSO control *	22.55 \pm 0.72	-	29	70/90	-
	Celecoxib (2) * Adult only	26.32 \pm 0.82	16.7%	31	61/90	0.0002
N2	DMSO control	16.65 \pm 0.54	-	21	63/72	-
	Celecoxib (2) Adult only	20.07 \pm 0.58	20.5%	24	60/72	<0.0001
<i>eat-2(ad1116)</i>	DMSO control	21.91 \pm 0.77	-	28	75/90	-
	Celecoxib (2) Adult only	24.99 \pm 0.92	14.1%	32	72/90	0.0022

Table S1 Con't

N2	DMSO control		16.77 ± 0.28	-	17	65/77	-
	OSU-03012 (0.5)		19.56 ± 0.25	16.6%	21	64/78	0.0003
<i>pha-4(zu225)</i>	DMSO control		16.73 ± 0.23	-	17	73/80	-
	OSU-03012 (0.5)		19.26 ± 0.24	15.1%	19	72/86	0.0007
N2 on EV	DMSO control *		18.80 ± 0.49	-	23	75/90	-
	Celecoxib (2) *		21.77 ± 0.60	15.8%	26	55/75	<0.0001
N2 on <i>cyc-1(RNAi)</i>	DMSO control *		29.74 ± 0.94	-	36	80/90	-
	Celecoxib (2) *		34.85 ± 1.05	17.2%	41	76/91	0.0002
N2 on EV	DMSO control		18.10 ± 0.58	-	21	64/72	-
	Celecoxib (2)		20.76 ± 0.85	14.7%	26	60/75	0.0038
N2 on <i>cyc-1(RNAi)</i>	DMSO control		29.27 ± 0.74	-	33	68/72	-
	Celecoxib (2)		33.41 ± 0.96	14.1%	39	60/72	<0.0001
N2	DMSO control		16.55 ± 0.60	-	20	59/72	-
	Celecoxib (2)	Adult only	20.24 ± 0.62	22.3%	24	61/72	<0.0001
<i>pdk-1(mg142)</i>	DMSO control		15.17 ± 0.52	-	20	75/90	-
	Celecoxib (2)	Adult only	15.96 ± 0.60	5.2%	20	73/90	0.12
<i>pdk-1(sa680)</i>	DMSO control		39.50 ± 1.27	-	47	59/60	-
	Celecoxib (2)	Adult only	40.03 ± 1.30	1.3%	47	57/90	0.67

Table S1. The effect of celecoxib on lifespan. Adult mean lifespan ± SEM, in days, observed in lifespan analysis. The strains and concentrations of the drugs tested were indicated. Lifespan experiments were carried out at 20°C. 75th percentile is the age at which the fraction of animals alive reaches 0.25. ‘N’ shows the number of observed deaths relative to total number of animals started at day 1. The difference between these numbers represents the number of animals censored during the experiment, and includes animals that exploded, bagged (i.e. exhibited internal progeny hatching), or crawled off the plates. P values were calculated by pair-wise comparisons to DMSO control of the same experiment. We used Stata 8 software (Stata Corp, TX, USA) for statistical analysis and to determine means and percentiles. The logrank (Mantel-Cox) test was used to test the hypothesis that the survival functions among groups were equal. Repetitions of the same experiments are listed in order. ‘*’ indicates the sets of experiments plotted and shown in Figures.

Table S2

Strains	Drug treatments (μM)	Mean lifespan \pm s.e.m. (days)	% Change in mean lifespan	75th percentile (days)	N	P
N2	DMSO control *	15.38 \pm 0.52	-	18	55/61	-
	OSU-03012 (0.01)	15.67 \pm 0.66	1.9%	18	53/60	0.55
	OSU-03012 (0.05)	17.51 \pm 0.69	13.8%	21	51/60	0.0070
	OSU-03012 (0.5) *	18.91 \pm 0.68	23.0%	23	56/70	<0.0001
	OSU-03012 (5)	16.60 \pm 0.66	7.9%	21	53/60	0.12
	OSU-03012 (10)	15.58 \pm 0.79	1.3%	18	48/60	0.48
N2	DMSO control *	16.83 \pm 0.64	-	22	59/72	-
	OSU-03012 (0.05) Adult only	19.05 \pm 0.94	13.2%	24	50/70	0.018
	OSU-03012 (0.5) * Adult only	22.70 \pm 0.83	34.9%	29	54/72	<0.0001
N2	DMSO control	16.70 \pm 0.49	-	19	61/72	-
	OSU-03012 (0.5) Adult only	20.04 \pm 0.70	20.0%	24	54/72	0.0002
N2	DMSO control *	16.69 \pm 0.47	-	20	63/72	-
	OSU-03012 (0.5) * Adult only	20.01 \pm 0.64	19.9%	24	70/72	<0.0001
<i>daf-16 (mu86)</i>	DMSO control *	14.63 \pm 0.39	-	16	53/90	-
	OSU-03012 (0.5) * Adult only	15.26 \pm 0.33	4.3%	18	57/90	0.38
<i>daf-2 (e1370)</i>	DMSO control *	54.03 \pm 1.91	-	65	60/72	-
	OSU-03012 (0.5) * Adult only	57.72 \pm 1.82	6.8%	70	59/72	0.16
N2	DMSO control	18.15 \pm 0.66	-	21	54/72	-
	OSU-03012 (0.5) Adult only	21.98 \pm 0.71	21.1%	26	53/72	<0.0001
<i>daf-16 (mu86)</i>	DMSO control	16.59 \pm 0.33	-	17	56/73	-
	OSU-03012 (0.05)	15.86 \pm 0.29	-4.4%	17	58/72	0.55
	OSU-03012 (0.5)	16.50 \pm 0.30	-0.5%	19	57/72	0.71
	OSU-03012 (5) Adult only	15.89 \pm 0.32	-4.2%	17	62/72	0.33
	DMSO control	54.93 \pm 2.07	-	68	71/80	-
<i>daf-2 (e1370)</i>	OSU-03012 (0.5) Adult only	58.57 \pm 1.64	8.6%	70	72/79	0.084
	N2	DMSO control *	16.28 \pm 0.55	-	20	63/72
OSU-03012 (0.5) * Adult only		19.97 \pm 0.68	22.7%	24	65/72	<0.0001
<i>eat-2(ad1116)</i>	DMSO control *	22.52 \pm 0.71	-	29	70/90	-
	OSU-03012 (0.5) * Adult only	27.74 \pm 0.85	23.2%	33	62/91	<0.0001
N2	DMSO control	16.65 \pm 0.54	-	21	63/72	-
	OSU-03012 (0.5) Adult only	20.89 \pm 0.61	25.5%	26	61/72	<0.0001
<i>eat-2(ad1116)</i>	DMSO control	22.36 \pm 0.76	-	28	75/90	-
	OSU-03012 (0.5) Adult only	26.03 \pm 0.87	16.4%	32	71/90	0.0005

Table S2 Con't

N2 on EV	DMSO control *	18.27 ± 0.49	-	21	50/72	-
	OSU-03012 (0.5) *	21.20 ± 0.58	16.0%	25	49/72	<0.0001
N2 on <i>cyc-1(RNAi)</i>	DMSO control *	23.87 ± 0.42	-	27	67/72	-
	OSU-03012 (0.5) *	27.22 ± 0.59	14.1%	30	66/72	<0.0001
N2 on EV	DMSO control	18.10 ± 0.58	-	21	64/72	-
	OSU-03012 (0.5)	22.27 ± 0.71	23.0%	25	55/72	<0.0001
N2 on <i>cyc-1(RNAi)</i>	DMSO control	29.27 ± 0.74	-	33	68/72	-
	OSU-03012 (0.5)	34.32 ± 0.88	17.3%	39	66/74	<0.0001
N2	DMSO control	16.55 ± 0.60	-	20	59/72	-
	OSU-03012 (0.5) Adult only	21.01 ± 0.67	26.9%	24	58/72	<0.0001
<i>pdk-1(mg142)</i>	DMSO control *	14.87 ± 0.51	-	20	75/90	-
	OSU-03012 (0.5) * Adult only	15.52 ± 0.54	4.4%	20	75/90	0.31
<i>pdk-1(sa680)</i>	DMSO control *	39.46 ± 1.26	-	47	57/60	-
	OSU-03012 (0.5) * Adult only	40.39 ± 1.38	2.4%	49	55/60	0.60
N2	DMSO control	16.16 ± 0.48	-	19	63/72	-
	OSU-03012 (0.5)	18.53 ± 0.60	14.7%	21	67/72	0.001
<i>pdk-1(mg142)</i>	DMSO control	14.66 ± 0.44	-	17	79/90	-
	OSU-03012 (0.5)	15.19 ± 0.51	3.6%	18	77/90	0.32
<i>pdk-1(sa680)</i>	DMSO control	44.49 ± 1.42	-	51	56/59	-
	OSU-03012 (0.5)	42.52 ± 1.43	-4.4%	51	57/60	0.39

Table S2. The effect of OSU-03012 on lifespan. Adult mean lifespan ± SEM, in days, observed in lifespan analysis. The strains and concentrations of the drugs tested were indicated. Lifespan experiments were carried out at 20°C. 75th percentile is the age at which the fraction of animals alive reaches 0.25. 'N' shows the number of observed deaths relative to total number of animals started at day 1. The difference between these numbers represents the number of animals censored during the experiment, and includes animals that exploded, bagged (i.e. exhibited internal progeny hatching), or crawled off the plates. P values were calculated by pair-wise comparisons to DMSO control of the same experiment. We used Stata 8 software (Stata Corp, TX, USA) for statistical analysis and to determine means and percentiles. The logrank (Mantel-Cox) test was used to test the hypothesis that the survival functions among groups were equal. Repetitions of the same experiments are listed in order. '**' indicates the sets of experiments plotted and shown in Figures.

Figure Legends

Figure S1. Celecoxib does not affect bacteria growth. Growth curve of (A) OP50, (B) HT115 (L4440), or (C) HT115 (*ftt-1* RNAi) bacteria cultured in LB broth containing 0.1% DMSO control (blue) or 2 μ M of celecoxib (red). Bacteria concentration (cfu/mL) versus time (hours). Each data point represents the mean \pm S.D. of duplicate measurements of bacteria concentration converted from OD⁶⁰⁰.

Figure S2. Celecoxib does not decrease progeny production. (A) Progeny profile of N2 animals grown on NGM plates containing 0.1% DMSO control (gray) or 2 μ M of celecoxib (white) from hatching. Number of progeny per worm at each time interval is shown. Error bars: \pm S.D. (B) Total brood size of N2 worms treated with DMSO control or 2 μ M celecoxib from hatching. The number of progeny produced by each worm was calculated from the progeny profile data in (A) and averaged. *P* values were calculated by Student's *t*-test.

Figure S1

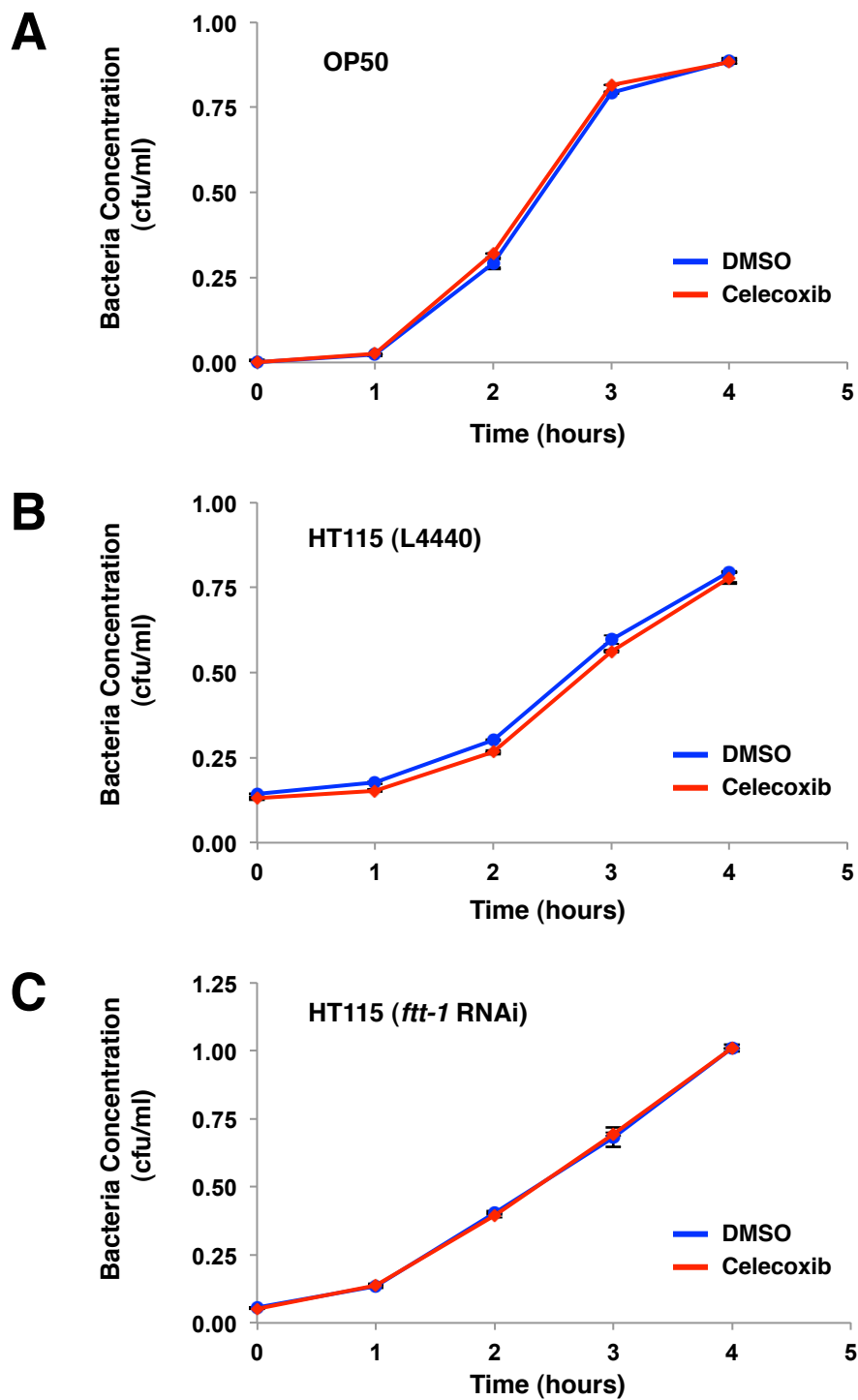
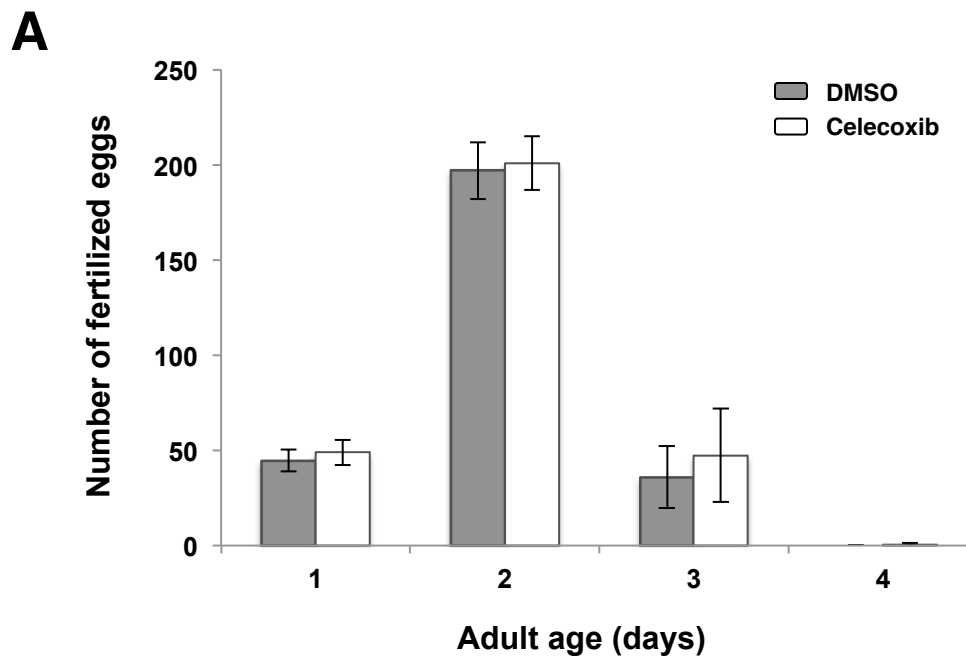


Figure S1. Celecoxib does not affect bacteria growth. Growth curve of OP50, HT115 (L4440), or HT115 (*ftt-1* RNAi) bacteria cultured in LB broth containing 0.1% DMSO (blue) or 2 μ M of celecoxib (red). Bacteria concentration (cfu/mL) versus time (hours). Each data point represents the mean \pm s.d. of three triplicate measurements of bacteria concentration converted from OD⁶⁰⁰.

Figure S2



B

Treatment	Average brood size/worm \pm SD (no. of worms)	<i>P</i> value
DMSO	278 \pm 30 (7)	
Celecoxib	298 \pm 35 (9)	0.245

Figure S2. Celecoxib does not decrease progeny production. (A) Progeny profile of N2 animals grown on NGM plates containing 0.1% DMSO control (gray) or 2 μ M celecoxib (white) from hatching. Number of progeny per worm at each time interval is shown. Error bars: \pm S.D. (B) Total brood size of N2 worms treated with DMSO control or 2 μ M celecoxib. The number of progeny produced by each worm was calculated from the progeny profile data in (A) and averaged. *P* values were calculated by Student's *t*-test.