

Strains	Drug treatments ^Δ (mg/ml)	Mean lifespan ± S.E.M (days)	% Change in mean lifespan [§]	p-value	75% mortality (days)	90% mortality (days)	Maximum (days)	Total number of worms analysed
N2	PBS control	19.69 ± 1.05	-	-	27	29	31	53
	Juglone (40 μM)	16.43 ± 0.55**	-16.56%	0.0021	18 ^{†††}	23 [†]	25	52
	Succinimide (1)	15.91 ± 0.57**	-19.20%	0.0003	18 ^{†††}	21 [†]	25	52
	Ethosuximide (1)	20.39 ± 1.02	3.56%	0.3966	27	29	33	54
	PBS control	18.55 ± 0.64	-	-	22	24	25	52
	Ethosuximide (2)	18.79 ± 1.06	1.29%	0.5061	24	25	29	52
N2; <i>L4440</i> (RNAi)	Ethosuximide (4)	17.12 ± 0.98	-7.71%	0.5000	21	23	26	52
	PBS control	19.48 ± 0.30	-	-	22	25	27	131
N2; <i>hsp-1</i> (RNAi)	Ethosuximide (1)	19.08 ± 0.38	-2.05%	0.9164	22	25	27	130
	PBS control	12.19 ± 0.24***	-	0.0e+00	14 ^{†††}	15	17	116
N2; <i>daf-16a</i> (RNAi)	Ethosuximide (1)	14.35 ± 0.38***	17.72%	2.2e-08	17 ^{†††}	20	25	118
	PBS control	15.73 ± 0.33***	-	0.0e+00	18 ^{†††}	20 ^{††}	22	128
<i>dj-14(ok237)</i>	Ethosuximide (1)	15.90 ± 0.33	1.08%	0.8868	18	20	25	128
	PBS control	15.87 ± 0.62	-	-	18	21	23	56
	Juglone (40 μM)	18.01 ± 0.57*	13.48%	0.0070	21	23	25	58
	Succinimide (1)	16.71 ± 0.51	5.29%	0.3586	18	21	25	54
	Ethosuximide (1)	21.56 ± 0.79***	35.85%	1.1e-07	21	23	25	58
	PBS control	15.76 ± 0.61	-	-	17	21	27	52
	Ethosuximide (0.0001)	16.66 ± 0.76	5.71%	0.4174	19 [†]	23 [†]	24	52
	Ethosuximide (0.001)	18.40 ± 0.84*	16.75%	0.0217	21 ^{††}	24 ^{††}	26	52
	Ethosuximide (0.01)	16.59 ± 0.60	5.27%	0.3757	19	22	25	50
	Ethosuximide (0.1)	17.46 ± 0.78	10.79%	0.1722	21	25 [†]	26	53
	Ethosuximide (0.2)	19.27 ± 0.78**	22.27%	0.0017	23 [†]	24	29	52
	Ethosuximide (0.5)	20.15 ± 0.98**	27.86%	0.0005	24 ^{††}	26 ^{††}	32	52
	Ethosuximide (1)	22.26 ± 1.25***	41.24%	2.6e-06	29 ^{††}	32 [†]	34	112
	Ethosuximide (2)	21.11 ± 1.21**	33.95%	0.0002	26 ^{††}	32 [†]	33	52
Ethosuximide (4)	18.73 ± 0.75**	18.85%	0.0038	22 ^{††}	24	26	55	
<i>dj-14(ok237); L4440</i> (RNAi)	PBS control	16.81 ± 0.32***	-	3.5e-09	20 ^{†††}	22 [†]	25	118
	Ethosuximide (1)	21.23 ± 0.44***	26.29%	1.2e-06	25 ^{††}	27 [†]	31	125
<i>dj-14(ok237); hsp-1</i> (RNAi)	PBS control	14.16 ± 0.28***	-	0.0e+00	15 ^{†††}	17 ^{††}	22	120
	Ethosuximide (1)	17.39 ± 0.39***	22.81%	0.0e+00	20 ^{†††}	25 ^{†††}	27	119
<i>dj-14(ok237); daf-16a</i> (RNAi)	PBS control	15.37 ± 0.37*	-	0.0113	18	20	22	114
	Ethosuximide (1)	16.23 ± 0.33	5.60%	0.1518	18	20	22	126

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<i>lin-25(n756)X; juls76[P_{unc-25::}GFP + lin-15(+)]</i>	PBS control	15.28 ± 0.41	-	-	18	20	22	102
	Ethosuximide (0.1)	16.02 ± 0.59	4.84%	0.1813	19	20	22	50
	Ethosuximide (0.2)	14.53 ± 0.58	-4.91%	0.5148	18	20	22	50
	Ethosuximide (0.5)	14.99 ± 0.79	-1.90%	0.8618	20	21	22	50
	Ethosuximide (1)	14.61 ± 0.65	-4.38%	0.8320	18	20	22	52
	Ethosuximide (2)	14.56 ± 0.76	-4.71%	0.5504	18 [†]	19 [†]	22	52
<i>bkIs10[P_{aex-3::}h4R1N TauV337M + P_{myo-2::}GFP]</i>	PBS control	10.94 ± 0.27	-	-	13	14	16	102
	Ethosuximide (0.0001)	13.18 ± 0.49**	20.48%	0.0002	16	17	20	52
	Ethosuximide (0.001)	13.51 ± 0.27***	23.49%	1.1e-06	15 [†]	16	17	52
	Ethosuximide (0.01)	13.80 ± 0.52***	26.14%	5.6e-06	15 [†]	20	21	52
	Ethosuximide (0.1)	13.79 ± 0.36***	26.05%	8.8e-09	16 ^{††}	18 [†]	20	102
	Ethosuximide (0.2)	14.04 ± 0.36***	28.34%	2.4e-09	16 ^{††}	17 [†]	20	102
	Ethosuximide (0.5)	13.76 ± 0.34***	25.78%	5.6e-09	15 ^{††}	16 [†]	19	102
	Ethosuximide (1)	14.17 ± 0.37***	29.52%	0.0e+00	16 ^{††}	19	20	102
	Ethosuximide (2)	15.50 ± 0.40***	41.68%	0.0e+00	18 ^{††}	20 [†]	21	102
	PBS control	11.28 ± 0.30	-	-	13	14	17	92
	PBS control + Kanamycin	15.50 ± 0.46***	37.41%	0.0e+00	17 ^{††}	19 [†]	25	81
	Ethosuximide (1)	16.71 ± 0.51***	48.14%	0.0e+00	21	23	25	80
	Ethosuximide (1) + Kanamycin	19.41 ± 0.60***	72.07%	0.0e+00	23	25	29	80
<i>cca-1(ad1650)</i>	PBS control	17.50 ± 0.55	-	-	21	24	27	108
	Ethosuximide (1)	17.82 ± 0.57	1.83%	0.5423	21	26	27	107
<i>bkIs10[P_{aex-3::}h4R1N TauV337M + P_{myo-2::}GFP]</i>	PBS control	11.45 ± 0.33	-	-	14	15	17	116
	Ethosuximide (1)	14.80 ± 0.43***	29.26%	6.5e-09	17 ^{††}	19 [†]	22	116
CK10; <i>cca-1(ad1650)</i>	PBS control	11.27 ± 0.31	-	-	14	15	19	114
	Ethosuximide (1)	14.27 ± 0.35***	26.62%	2.2e-09	16	17 ^{††}	23	112

Table S1: Statistical analysis of lifespan extension in *C. elegans*. Adult mean lifespan \pm 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. Online Application for the Survival Analysis of Lifespan Assays (OASIS; <http://sbi.postech.ac.kr/oasis/introduction/>) (Yang *et al.*, 2011) was used for statistical analysis and to determine means and percentiles. Mean lifespans were compared using the log-rank (Mantel-Cox) test (* $p < 0.05$; ** $p < 0.005$; *** $p < 0.0001$), and mortality at more specific time points was compared using Fisher's exact test ([†] $p < 0.05$ ^{††} $p < 0.005$; ^{†††} $p < 0.0001$). Δ Drug treatments were from conception until death. PBS was used to solubilise ethosuximide, and PBS alone was the control treatment for ethosuximide. For the antibiotic kanamycin treatment of OP50 *E.coli*, 80 μ l of 10 mM kanamycin solubilised by water was added after 24 hours of bacterial growth as described, kanamycin alone was the control treatment for kanamycin + ethosuximide combined treatment. §The percentage change and the statistical significance of this change were determined by comparing the experimental ethosuximide treatments to PBS control. The experimental treatment kanamycin + ethosuximide was compared to kanamycin.