

SUPPLEMENTARY TABLES

Supplementary Table S1. The effects of NAC on *D. melanogaster* lifespan parameters.

Variant	Sex	M (days)	dM (%)	Log-Rank test (p)	Max (days)	dMax (%)	Wang-Allison test (p)	MRDT (days)	dMRD T (%)	n
control	♂	54			64			6.9		535
10 nM	♂	57	5.6	p < 0.05	67	4.7	p < 0.01	7.2	4.3	306
100 nM	♂	59	9.3	p < 0.0001	69	7.8	p < 0.0001	6.9	0	296
1 μM	♂	58	7.4	p < 0.001	67	4.7	p < 0.01	7.8	13	297
10 μM	♂	56	3.7	p > 0.05	68	6.2	p < 0.01	8.3	20.3	299
100 μM	♂	57	5.6	p < 0.001	71	10.9	p < 0.0001	8.7	26.1	299
1 mM	♂	56	3.7	p < 0.05	65	1.6	p < 0.05	8.2	18.8	304
10 mM	♂	44	-18.5	p < 0.0001	61	-4.7	p > 0.05	6.5	-5.8	271
100 mM	♂	51	-5.6	p < 0.001	61	-4.7	p > 0.05	6.1	-11.6	269
control	♀	67			78			6.5		583
10 nM	♀	66	-1.5	p < 0.001	74	-5.1	p < 0.01	6	-7.7	312
100 nM	♀	66	-1.5	p < 0.0001	74	-5.1	p < 0.0001	6.6	1.5	306
1 μM	♀	67	0	p > 0.05	81	3.8	p > 0.05	7.1	9.2	276
10 μM	♀	64	-4.5	p < 0.001	73	-6.4	p < 0.001	6.7	3.1	307
100 μM	♀	64	-4.5	p < 0.001	76	-2.6	p < 0.05	7.3	12.3	295
1 mM	♀	64	-4.5	p < 0.0001	73	-6.4	p < 0.0001	6.7	3.1	295
10 mM	♀	64	-4.5	p > 0.05	76	-2.6	p > 0.05	6.7	3.1	289
100 mM	♀	60	-10.4	p < 0.0001	71	-9	p < 0.0001	6.5	0	277

M - median lifespan; Max - maximum lifespan (age of 90% mortality); MRDT - mortality rate doubling time; dM, dMax, dMRDT - differences between median and maximum (age of 90% mortality) lifespan and MRDT of control and experimental flies, respectively; n - number of flies.

Supplementary Table S2. The effects of NAC on *D. virilis* lifespan parameters.

Variant	Sex	M (days)	dM (%)	Log-Rank test (p)	Max (days)	dMax (%)	Wang-Allison test (p)	MRDT (days)	dMRDT (%)	n
control	♂	71			105			18.2		588
10 nM	♂	94	32.4	p < .0001	114	8.6	p < 0.0001	13.3	-26.9	287
100 nM	♂	93	31	p < .0001	114	8.69	p < 0.0001	12	-34.1	285
1 μM	♂	93	31	p < .0001	113	7.6	p < 0.0001	12.6	-30.8	287
10 μM	♂	92	29.6	p < .0001	113	7.6	p < 0.0001	12.4	-31.9	288
100 μM	♂	93	31	p < .0001	113	7.6	p < 0.0001	12.4	-31.9	282
1 mM	♂	93	31	p < .0001	108	2.9	p > 0.05	12.2	-33	293
10 mM	♂	65	-8.5	p < .0001	74	-29.5	p < 0.0001	12.8	-29.7	328
100 mM	♂	50	-29.6	p < .0001	58	-44.8	p < 0.0001	9.9	-45.6	276
control		75			102			14.7		640
10 nM	♀	92	22.6	p < .0001	109	6.9	p < 0.0001	10.2	-30.6	314
100 nM	♀	89	18.7	p < .0001	107	4.9	p < 0.001	10.7	-27.2	293
1 μM	♀	87	16	p < .0001	109	6.9	p < 0.01	10.2	-30.6	330
10 μM	♀	92	22.7	p < .0001	109	6.9	p < 0.0001	10.7	-27.2	299
100 μM	♀	94.5	26	p < .0001	112	9.8	p < 0.0001	10.2	-30.6	320
1 mM	♀	93	24	p < .0001	111	8.8	p < 0.0001	9.4	-36.1	287
10 mM	♀	67	-10.7	p < .0001	90	-11.8	p < 0.0001	14.4	-2	445
100 mM	♀	45	-40	p < .0001	54	-47.1	p < 0.0001	6.4	-56.5	438

M - median lifespan; Max - maximum lifespan (age of 90% mortality); MRDT - mortality rate doubling time; dM, dMax, dMRDT - differences between median and maximum (age of 90% mortality) lifespan and MRDT of control and experimental flies, respectively; n - number of flies.

Supplementary Table S3. The effects of NAC on *D. kikkawai* lifespan parameters.

Variant	Sex	M (days)	dM (%)	Log-Rank test (p)	Max (days)	dMax (%)	Wang-Allison test (p)	MRDT (days)	dMRD T (%)	n
control	♂	25			36			7.5		538
10 nM	♂	27	8	p < 0.0001	43	19.4	p < 0.0001	8.4	12	298
100 nM	♂	28	12	p < 0.0001	39	8.3	p < 0.01	7.1	-5.3	292
1 μM	♂	29	16	p < 0.0001	40	11.1	p < 0.0001	7.5	0	285
10 μM	♂	29	16	p < 0.01	36	0	p > 0.05	6.4	-14.7	299
100 μM	♂	29	16	p < 0.0001	41	13.9	p < 0.0001	7.9	5.3	312
1 mM	♂	29	16	p < 0.0001	41	13.9	p < 0.0001	7.4	-1.3	292
10 mM	♂	16	-36	p < 0.0001	28	-22.2	p < 0.0001	10.2	36	293
100 mM	♂	22	-12	p < 0.0001	30	-16.7	p < 0.0001	5.9	-21.3	296
control	♀	39			51			7.9		641
10 nM	♀	41	5.1	p < 0.05	51	0	p > 0.05	6.4	-19	293
100 nM	♀	41	5.1	p < 0.05	50	-2	p > 0.05	7.4	-6.3	295
1 μM	♀	41	5.1	p > 0.05	51	0	p > 0.05	6.5	-17.7	297
10 μM	♀	39	0	p > 0.05	50	-2	p > 0.05	7.6	-3.8	299
100 μM	♀	40.5	3.8	p > 0.05	48	-5.9	p < 0.01	6.8	-13.9	290
1 mM	♀	40	2.6	p > 0.05	51	0	p > 0.05	7.1	-10.1	311
10 mM	♀	35	-10.3	p > 0.05	55	7.8	p < 0.05	10.3	30.4	296
100 mM	♀	34	-12.8	p < 0.0001	50	-2	p > 0.05	9.6	21.5	288

M - median lifespan; Max - maximum lifespan (age of 90% mortality); MRDT - mortality rate doubling time; dM, dMax, dMRDT - differences between median and maximum (age of 90% mortality) lifespan and MRDT of control and experimental flies, respectively; n - number of flies.

Supplementary Table S4. Influence of NAC treatment on *D. melanogaster* resistance to paraquat, starvation and hyperthermia (see Full Text version).

Supplementary Table S5. Influence of NAC treatment on *D. virilis* resistance to paraquat, starvation and hyperthermia (see Full Text version).

Supplementary Table S6. Influence of NAC treatment on *D. kikkawai* resistance to paraquat, starvation and hyperthermia (see Full Text version).

Supplementary Table S7. Relative antioxidant and H₂S biosynthesis gene expression levels normalized to control in *D. melanogaster*.

variant	<i>Cat/CG6871</i>		<i>Sod1/CG11793</i>		<i>Cbs/CG1753</i>		<i>Eip55E/CG5345</i>		<i>Nfs1/CG12264</i>	
	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀
control	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
10 nM	1.4**	0.2*	1.1	0.6*	2.0*	1.1	0.5*	0.4*	3.0*	0.8*
100 nM	1.5**	0.3*	1.0	0.9	1.3	1.1	0.6*	0.4*	1.2*	0.5*
1 μM	0.8*	0.4*	1.1	0.6*	2.6*	0.7	1.8*	0.5*	5.6**	0.8*
10 μM	0.5*	0.3*	0.7*	0.5*	0.4*	0.6	0.2***	0.7*	0.5*	0.7*
100 μM	5.8**	0.5*	1.7**	0.5*	5.3**	1.4*	0.5**	2.9**	0.8*	2.1*
1 mM	6.3**	0.3*	2.8**	0.4**	2.3*	0.4*	0.3***	1.9*	0.8*	2.1*
10 mM	1.7*	0.5*	1.2*	0.4**	1.5*	0.6	4.9***	0.4*	15.0***	0.5*
100 mM	7.0**	0.6*	1.6**	0.7*	1.6*	0.7	0.03***	0.1*	3.6**	0.6*

*p<0.05, **p<0.01, ***p<0.001

Supplementary Table S8. List of primers for qRT-PCR.

Gene	Forward	Reverse
<i>β-Tubulin</i>	5'-GGCCAACCTGAACGCTGATCT -3'	5'-AAGCCGGGCATGAAGAAGTG-3'
<i>Catalase</i> (<i>Cat/CG6871</i>)	5'- CCCAAGAACTACTTTGCTGAGGTG-3'	5'- AGGAGAACAGACGACCATGCAG- 3'
<i>Superoxide dismutase 1</i> (<i>Sod1/CG11793</i>)	5'-TGCACGAGTTCGGTGACAACAC-3'	5'- TCCTTGCCATACGGATTGAAGTG C-3'
<i>Cystathionine β-synthase</i> (<i>Cbs/CG1753</i>)	5'-AGATTACGCCCAACATCCTC-3'	5'-CTCGCACTTGGCATAACATCT-3'
<i>Ecdysone-induced protein 55E</i> (<i>Eip55E/CG5345</i>)	5'-GTGTGGATCGAGTCACCAAC-3'	5'-GGAGGTCAGGAAGGTGTTGT-3'
<i>Nfs1 cysteine desulfurase</i> (<i>Nfs1/CG12264</i>)	5'-CTTTCTTTGCGTGAGATGGA-3'	5'-GTATGTGGCTTTGGCATCAC-3'