

Supplementary table 1. Statistical analysis for Figure 1.

Set	Genotype or condition	Temperature during sequential steps							N dead / initial N	Group	% Mean survival change vs. group a	P value (log-rank) vs. group a	P value (log-rank) vs. group b	P value (log-rank) vs. group c	Figure
		egg → late L4	heat treatment	late L4 → day 2 adult	survival assay	Mean survival ± SEM (days)	Median survival (days)	75th percentile (days)							
Heat shock pretreatment in wild type															
	no heat shock	20°C	20°C	20°C	20°C	1.30 ± 0.02	1.27	1.47	150 / 158	a					
	1-hour heat shock	20°C	34°C	20°C	20°C	1.52 ± 0.03	1.47	1.69	146 / 162	b	17%	< 0.0001			1A
	2-hours heat shock	20°C	34°C	20°C	20°C	1.91 ± 0.03	1.95	2.20	132 / 151	c	46%	< 0.0001	< 0.0001		
Heat shock pretreatment in wild type and <i>hsf-1(sy441)</i>															
	wild type	20°C	20°C	20°C	20°C	1.03 ± 0.02	1.00	1.14	117 / 144	a					
	wild type + 2-hour heat shock	20°C	34°C	20°C	20°C	1.39 ± 0.02	1.37	1.51	139 / 168	b	35%	< 0.0001			1B
	<i>hsf-1(sy441) /</i>	20°C	20°C	20°C	20°C	1.00 ± 0.02	1.03	1.15	145 / 163	c	-4%	> 0.05	< 0.0001		
	<i>hsf-1(sy441) /</i> + 2-hour heat shock	20°C	34°C	20°C	20°C	1.20 ± 0.03	1.19	1.40	156 / 168	d	16%	< 0.0001	< 0.0001	< 0.0001	
Mild temperature upshift															
	wild type	20°C	-	25°C	25°C	0.82 ± 0.01	0.82	0.94	140 / 140	a					
	<i>hsf-1(sy441) /</i>	20°C	-	25°C	25°C	0.63 ± 0.02	0.65	0.74	118 / 118	b	-23%	< 0.0001			1C

Supplementary table 2. Statistical analysis for Figure 2.

Set	Genotype or condition	[tBuOOH] in survival assay	Mean survival \pm SEM (days)	Median survival (days)	75th percentile (days)	N dead / initial N	% Mean survival change vs. wild type	P value (log-rank) vs. wild type	Figure
Peroxide resistance at 20°C									
wild type		6 mM	1.38 \pm 0.02	1.38	1.54	151 / 164			2A
	<i>hsf-1(sy441) I; uth1s225[sur5p::hsf-1(CT-Delta)::unc-54 3'UTR + myo-2p::tdTomato::unc-54 3' UTR]</i>		4.16 \pm 0.16	3.58	5.24	142 / 156	202%	< 0.0001	
wild type		6 mM	1.29 \pm 0.03	1.23	1.45	133 / 145			2B
	<i>uth1s235[sur-5p::hsf-1::unc-54 3'UTR + myo-2p::tdTomato::unc-54 3' UTR]</i>		3.95 \pm 0.12	3.88	4.85	143 / 147	206%	< 0.0001	
wild type		10 mM	0.79 \pm 0.01	0.78	0.89	128 / 128			2C
	<i>hsb-1(cg116) IV</i>		0.93 \pm 0.02	0.89	1.08	107 / 107	17%	< 0.0001	
wild type + empty vector		6 mM	2.18 \pm 0.04	2.11	2.51	131 / 131			2D
	<i>hsf-1(RNAi)</i>		1.07 \pm 0.05	1.05	1.34	54 / 54	-51%	< 0.0001	

Supplementary table 3. Statistical analysis for Figure 3.

Set	Genotype or condition	Mean survival ± SEM (days)	Median survival (days)	75th percentile (days)	N dead / initial N	% Mean survival change vs. wild type	P value (log-rank) vs. wild type	Figure
Peroxide resistance at 20°C								
	wild type	2.04 ± 0.05	1.94	2.21	142 / 142			3A
	<i>asp-4(ok2693)</i> X	1.15 ± 0.02	1.12	1.25	133 / 133	-44%	< 0.0001	
	wild type	1.69 ± 0.04	1.66	1.88	140 / 140			3B
	<i>dapk-1(ju4)</i> I	1.04 ± 0.03	1.06	1.38	145 / 145	-38%	< 0.0001	