

Title: Health and longevity studies in *C. elegans*: The “Healthy Worm Database” reveals strengths, weaknesses and gaps of test compound-based studies

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ESM_2: Health-related measurements

Phenotype Group	Phenotype	Number of compounds
healthspan biomarkers	acetylcholine level	1
healthspan biomarkers	activity / quantity / expression of CTLs	29
healthspan biomarkers	activity / quantity / expression of CYPs	4
healthspan biomarkers	activity / quantity / expression of GCS-1	2
healthspan biomarkers	activity / quantity / expression of glutathione peroxidase	4
healthspan biomarkers	activity / quantity / expression of GPDHs	1
healthspan biomarkers	activity / quantity / expression of GSTs	55
healthspan biomarkers	activity / quantity / expression of HSPs	62
healthspan biomarkers	activity / quantity / expression of SKN-1	1
healthspan biomarkers	activity / quantity / expression of SODs	66
healthspan biomarkers	activity / quantity / expression of UGTs	1
healthspan biomarkers	activity of acetylcholinesterase	4
cognitive function	aldicarb resistance	1
healthspan biomarkers	AMP:ATP ratio	1
healthspan biomarkers	antioxidative capacity	4
physiological function	arsenite stress resistance	1
healthspan biomarkers	ATP level	8
healthspan biomarkers	autofluorescence (age pigment / lipofuscin)	54
healthspan biomarkers	axonal dystrophy	3
physical function	body length / growth rate	52
cognitive function	chemotaxis	20
healthspan biomarkers	concentration of N(6)-Carboxymethyllysine (CML)	4
physical function	duration of defecation cycles	3
healthspan biomarkers	F3-isoprostane level	1
physical function	fast body movement span	6
physical function	fast pharyngeal pumping span	2
physical function	food consumption	5
healthspan biomarkers	GSH level	9
physiological function	heat stress resistance	202
healthspan biomarkers	hexokinase activity	1
healthspan biomarkers	intestinal bacteria colonization	1
healthspan biomarkers	lactate level	2
healthspan biomarkers	level of 4-HNE	1
healthspan biomarkers	level of autophagy	7
healthspan biomarkers	lipase activity	1
lifespan	maximum lifespan	103

healthspan biomarkers	MDA level	13
lifespan	mean lifespan	288
cognitive function	mechanical sensory / touch response	9
lifespan	median lifespan	76
cognitive function	memory	1
physiological function	metal stress resistance	1
lifespan	minimum lifespan	10
healthspan biomarkers	mitochondrial content/quality	5
healthspan biomarkers	mitochondrial DNA (mtDNA) integrity	1
healthspan biomarkers	mitochondrial DNA copy number	1
healthspan biomarkers	mitochondrial membrane potential	2
healthspan biomarkers	mitochondrial ROS production	1
healthspan biomarkers	muscle integrity	5
cognitive function	neuronal survival	7
reproductive function	number of offspring	92
reproductive function	onset of egg laying	9
physiological function	osmotic stress resistance	7
physiological function	oxidative stress resistance	213
healthspan biomarkers	oxygen consumption rate (OCR)	7
physiological function	pathogen stress resistance	7
physical function	pharyngeal pumping	91
physical function	pharyngeal total span	4
healthspan biomarkers	phosphofructokinase activity	1
healthspan biomarkers	phosphorylation level of PMK-1	1
healthspan biomarkers	proteasomal activity	9
healthspan biomarkers	pyruvate kinase activity	1
healthspan biomarkers	pyruvate level	2
healthspan biomarkers	quantity of apoptotic cells	2
healthspan biomarkers	quantity of carbonylated proteins	6
reproductive function	quantity of dauer formation	4
cognitive function	quantity of D-type GABAergic motorneurons	1
reproductive function	quantity of early reproduction	17
reproductive function	quantity of embryonic lethality	1
healthspan biomarkers	quantity of germline stem cells	1
reproductive function	quantity of internal hatch	1
reproductive function	quantity of late reproduction	12
healthspan biomarkers	quantity of polyQ aggregates	11
healthspan biomarkers	quantity of β -amyloid	16
healthspan biomarkers	quantity of α -synuclein	16
reproductive function	reproductive growth span	1
reproductive function	reproductive total span	10
healthspan biomarkers	ROS level	113
physiological function	salt stress resistance	1
reproductive function	speed of larval development	13
lifespan	survival at a given time point	3
healthspan biomarkers	thiol level	2
healthspan biomarkers	translocation of DAF-16 to nucleus	73

healthspan biomarkers	translocation of SKN-1 to nucleus	16
healthspan biomarkers	triglyceride / fat / lipid content	27
physiological function	UV stress resistance	18
physical function	velocity / motility / body movement in liquid	24
physical function	velocity / motility / body movement on solid media	85
reproductive function	vertex (progeny per day)	21