Table SI 1. Alkaloids

Compound	Structure (Smiles)	Dose [Ref]	Experiment	Parameters	Effect	Involved Genes	Strain	Treat. Start	Food	Media	Treatment application	Vector
Trigonelline	C[N+]1=CC=CC(=C1)C(=O)[O-]	25, 50, 100 and 200 µM [1]	Lifespan	n.d.	Improved	aak-2, daf-16, hsf-1, clk-1, mev-1, isp-1, eat-2, sir-2.1, and rsks-1	N2	L4	Heat-inactivated OP50	NGM agar	NGM plates with compound were equilibrated overnight	0% DMSO
				n.d.	Improved		CL2006					
			Locomotion	Number of body bends	Improved		N2					
			Autofluorescence	Microscopy and image processing (360-370/420-460 nm filter)	Improved							
			Antioxidative capacity	Measurement of dichlorofluorescein fluorescence	Improved							
			ROS stress survival	Induced with 20mM paraquat	Improved							
			Thermal stress survival	Induced with 35 °C	Improved							
			Proteotoxicity	Quantification of YFP tagged polyglutamine expression in muscles by microscopy and image processing	Improved		AM140					
				Paralysis assay with temperature-dependent amyloid beta expression in muscles	Improved		CL4176	L1				
				Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image processing	Improved		NL5901	L4				
				6-OHDA induced neurodegeneration monitored by GFP tagged dopamine transporter expression	Improved		BZ555	L3				
Caffeine	CN1C=NC2=C1C(=O)N(C(=O)N2C)C	50 µM [2]	Lifespan	Death Time 50 (DT50)	No effect	n.d.	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO
		1 mM [3]	Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	Improved	n.d.	CL4176	L1	OP50	Liquid NGM	Diluted in liquid	0 % DMSO
		3.6 mM [4]	Proteotoxicity	Paralysis assay with constitutive age -dependent polyglutamine aggregation in muscles	Improved	hsf-1	AM140	L1	OP50	NGM agar	Diluted in NGM	0% DMSO
				Quantification of YFP tagged polyglutamine expression in muscles by microscopy and image processing	Improved							
Huperzine A	CC=C1[C@@H]2CC3=C([C@]1(CC(=C2)C)N)C=CC(=O)N3	300 µM [5]	Lifespan	Mean lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	Diluted into OP50 stock	n.d.
Fargesine	C[N+]1(CCC2=CNC3=C2C(=C(C=C3)O)C1)[O-]	25 and 100 µM [6]	Locomotion	Motility classes	Improved	ser-1, mtl-2	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO
			Pharyngeal Pumping	Pumping rate	Detrimental			A				
			Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	Improved		CL2659	L3				
				Quantification of YFP tagged α-synuclein expression in muscles with microplate reader	Improved		NL5901	L4				
Nemorosine A	C[N+](CC1)=CC2=C(O)C=CC3=C2C1=CN3	25 and 100 µM [6]	Locomotion	Motility classes	Improved	ser-1, mtl-2	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO
			Pharyngeal Pumping	Pumping rate	Detrimental			A				
			Proteintoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	Improved		CL2659	L3				
				Quantification of YFP tagged α-synuclein expression in muscles with microplate reader	Improved		NL5901	L4				
Peiminine	C[C@H]1CC[C@H]2[C@@]([C@H]3CC[C@@H]4[C@H]([C@@H]3CN2C1)C[C@H]5[C@H]4C(=O)[C@@H]6[C@@]5(CC[C@@H](C6)O)C)(C)O	50 and 250 µM [7]	Lifespan	Mean lifespan of animals treated with 6-OHDA	Improved	pink-1, pdr-1, unc-59, unc-61 and iap	N2	L1	OP50	NGM agar	n.d.	n.d.
			ROS levels	Measurement of dichlorofluorescein fluorescence	Improved							
					Improved		NL5901					
			Proteintoxicity	Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image processing	Improved							
			Neurodegeneration	6-OHDA induced neurodegeneration monitored by GFP tagged dopamine transporter expression	Improved		BZ555					
			Autophagy	GFP::LGG-1 marked autophagic vesicles were counted in seam cells	Improved		DA2123					

Table SI 2. Fragment-like compounds (MW < 200)

Compound	Structure (Smiles)	Dose [Ref]	Experiment	Parameters	Effect	Involved Genes	Strain	Treat. Start	Food	Media	Treatment application	Vector
4-Hydroxybenzoic acid	C1=CC(=CC=C1C(=O)O)O	10 μM [8]	ROS stress survival	Induced with 250 μM juglone	Improved	n.d.	N2	L1	OP50	S medium	Diluted in liquid	0.1% DMSO
		25 μM [9]	Lifespan elongation	Mean and maximum lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	Diluted into agar	0.1% DMSO
		12.5 μM [10]	Lifespan	Mean lifespan	No effect	n.d.	N2	L1	OP50	NGM agar	Diluted in autoclaved NGM	0.1% DMSO
			Locomotion	Travel range/speed	No effect							
			Pharyngeal pumping	Pumping rate	No effect							
			Autofluorescence	Microscopy and image processing (n.d. filter)	Improved							
			Thermal stress survival	Induced with 37°C	Improved							
			ROS stress survival	Induced with 1 mM juglone	Improved							
			Hypertonic stress survival	Induced with 500 mM NaCl	Improved							
			Antioxidative capacity	Measurement of intracellular dichlorofluorescein fluorescence after incubation with juglone	Improved							
Vanillic acid	COC1=C(C=CC(=C1)C(=O)O)O	10 μM [8]	ROS stress survival	Induced with 250 μM juglone	Improved	n.d.	N2	L1	OP50	S medium	Diluted in liquid	0.1% DMSO
3,4-Dihydroxybenzaldehyde	C1=CC(=C(C=C1C=O)O)O	100 – 300 μM [11]	Neurodegeneration	Paralysis assay with age-dependent TDP-43 toxicity of GABAergic neurons	Improved	n.d.	Trangene worm with genotype unc-47p::TDP-43A315T	L4	OP50	NGM agar	Added directly to the NGM	0% DMSO
				Neurodegeneration monitored by GFP tagged unc-47 in GABAergic neurons	Improved		Trangene worm with genotype unc-47p::GFP					
Syringaldehyde	COc1cc(cc(c1O)OC)C=O	100 – 300 μM [11]	Neurodegeneration	Paralysis assay with age-dependent TDP-43 toxicity of GABAergic neurons	Improved	n.d.	Trangene worm with genotype unc-47p::TDP-43A315T	L4	OP50	NGM agar	Added directly to the NGM	0% DMSO
				Neurodegeneration monitored by GFP tagged unc-47 in GABAergic neurons	Improved		Trangene worm with genotype unc-47p::GFP					
Tyrosol	Oc1ccc(cc1)CCO	1 mM [12]	Lifespan	Mean lifespan	Improved	hsp-70, hsp-12.6, hsp-16.2, gst-4	NL5901	A	OP50	S medium	Diluted in liquid	0.1% DMSO
			Motility	Activity counts per 30 minutes using WMicrotracker	Improved							
					No effect		N2					
			ROS levels	Measurement of dichlorofluorescein fluorescence	Improved		NL5901					
			Proteotoxicity	Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image	Improved		NL5901	L4		NGM agar	Diluted into agar before pouring to	

				processing							petri dishes	
			Neurodegeneration	Count of intact dopaminergic neurons which degenerate due to α-synuclein expression	Improved		UA44					
		250 µM [13]	Lifespan	Median, maximum and mean lifespan	Improved	daf-2, daf-16 and hsf-1	DH26	L1	OP50	NGM agar	Diluted into agar before pouring to petri dishes	0.1% EtOH
					Improved			A				
			Pharyngeal pumping	Pharyngeal pumps	Improved			L1				
			Thermal stress survival	Induced with 35 °C	Improved							
			ROS stress survival	Induced with 4 mM paraquat	Improved		N2					
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
Hydroxytyrosol	C1=CC(=C(C=C1CCO)O)O	10, 50, 100 µg/ml ≙ 65, 324 and 649 µM [14]	Locomotion	Number of body bends	No effect	daf-16	N2	L1	OP50	NGM agar	Diluted into agar before pouring to petri dishes	0% DMSO
			Pharyngeal pumping	Pharyngeal pumps	No effect							
			Antioxidative capacity	Measurement of dichlorofluorescein fluorescence during incubation at 37 °C	Improved							
			Thermal stress survival	Induced with 35 °C	Improved							
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
		250 ug/ml ≙ 1.62 mM [15]	Lifespan	Mean, median and maximum lifespan	Improved	daf-16, skn-1	N2	L4	OP50	NGM agar	Added to the bacteria and agar	0% DMSO
			Locomotion	Wave initiation rate, body wave number and activity index	No effect							
			Thermal stress survival	Induced with 37 ◦C	Improved							
			Autofluorescence	Microscopy and image processing (545/610 nm filter)	Improved							
			Proteotoxicity	Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image processing	Improved		OW13					
			Neurodegeneration	6-OHDA induced neurodegeneration monitored by GFP tagged dopamine transporter expression	Improved		UA44					
		250 µg/ml ≙ 1.62 mM [16]	Locomotion	Wave initiation rate, body wave number and activity index of muscle α-synuclein expressing worms	Improved	n.d.	OW13	L4	n.d.	n.d.	n.d.	n.d.
				Wave initiation rate, body wave number and activity index of worms treated with 10 µM rotenone	Improved		N2					
			Thermal stress survival	Induced with 37 ◦C	Improved							
			Proteotoxicity	Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image processing	Improved		OW13					
Phenethylamine	C1=CC=C(C=C1)CCN	25, 50 and 100 µM [9]	Lifespan elongation	Mean and maximum lifespan	Improved	sir-2.1	N2	L4	OP50	NGM agar	Diluted into agar	0.1% DMSO
Tyramine	C1=CC(=CC=C1CCN)O	50 µM [9]	Lifespan elongation	Mean and maximum lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	Diluted into agar	0.1% DMSO
Tryptamine	C1=CC=C2C(=C1)C(=CN2)CCN	50 µM [9]	Lifespan elongation	Mean and maximum lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	Diluted into agar	0.1% DMSO
N-Phenethylacetamide	CC(=O)NCCC1=CC=CC=C1	25, 50 and 100 µM [9]	Lifespan elongation	Mean and maximum lifespan	Improved	sir-2.1	N2	L4	OP50	NGM agar	Diluted into agar	0.1% DMSO

N-Acetyltyramine	CC(=O)NCCC1=CC=C(C=C1)O	50 µM [9]	Lifespan elongation	Mean and maximum lifespan	No effect	n.d.	N2	L4	OP50	NGM agar	Diluted into agar	0.1% DMSO
N-Acetyltryptamine	CC(=O)NCCC1=CNC2=CC=CC=C21	50 µM [9]	Lifespan elongation	Mean and maximum lifespan	No effect	n.d.	N2	L4	OP50	NGM agar	Diluted into agar	0.1% DMSO
3-Butylidenephthalide	CCC/C=C\1/C2=CC=CC=C2C(=O)O1	2 and 5 mM [17]	Lifespan elongation	Mean lifespan of animals treated with 6-OHDA	Improved	rpn-6, egl-1	N2	Adult	OP50	NGM agar	n.d.	1% DMSO
			Proteotoxicity	Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image processing	Improved		OW13	L3				
Floridoside	C([C@@H]1[C@@H]([C@@H]([C@H]([C@H](O1)OC(CO)CO)O)O)O)O	n.d. [18]	ROS stress survival	Induced with 300 µM juglone	Improved	n.d.	N2	L1	OP50	NGM agar	Added to the NGM before OP50 were spread	0.05–0.1% MeOH
Isothionic acid	O=S(=O)(O)CCO	n.d. [18]	ROS stress survival	Induced with 300 µM juglone	Improved	n.d.	N2	L1	OP50	NGM agar	Added to the NGM before OP50 were spread	0.05–0.1% MeOH
Hydroxycitric acid	C(C(=O)O)C(C(C(=O)O)O)(C(=O)O)O	2 mM [3]	Lifespan	Mean and median lifespan	Improved	daf-16	N2	L4	OP50	Liquid NGM	Diluted in liquid	0 % DMSO
			Locomotion	Motility classes	Improved							
			Thermal stress survival	Induced with 35 °C	No effect							
			ROS levels	Measurement of dichlorofluorescein fluorescence	No effect							
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
				SKN-1:GFP	Improved		LD001					
Isocitric acid	C(C(C(C(=O)O)O)C(=O)O)C(=O)O	2 mM [3]	Lifespan	Mean and median lifespan	No effect	n.d.	N2	L4	OP50	Liquid NGM	Diluted in liquid	0 % DMSO
			Locomotion	Motility classes	No effect							
			Thermal stress survival	Induced with 35 °C	No effect							
			ROS levels	Measurement of dichlorofluorescein fluorescence	No effect							
			Nuclear translocation	DAF-16::GFP	No effect		TJ356					
				SKN-1:GFP	No effect		LD001					
2,3-Pentanediol	CCC(C(C)O)O	0.01%, 0.1%, 1% [19]	Lifespan	Maximum, minimum and mean lifespan	Improved	n.d.,	N2	L1	OP50	NGM agar	n.d.	0% DMSO
			Pharyngeal pumping	Pumping rate	No effect							
			Thermal stress survival	Induced with 37 °C	Improved							
			ROS stress survival	Induced with 10 mM paraquat	Improved							
			ROS levels	Measurement of dichlorofluorescein fluorescence	Improved							
1,5-Pentanediol	C(CCO)CCO	0.01%, 0.1%, 1% [19]	Lifespan	Maximum, minimum and mean lifespan	Improved	n.d.,	N2	L1	OP50	NGM agar	n.d.	0% DMSO
			Pharyngeal pumping	Pumping rate	No effect							
			Thermal stress survival	Induced with 37 °C	Improved							
			ROS stress survival	Induced with 10 mM paraquat	Improved							
			ROS levels	Measurement of dichlorofluorescein fluorescence	No effect							

Table SI 3. Fatty acids

Compound	Structure (Smiles)	Dose [Ref]	Experiment	Parameters	Effect	Involved Genes	Strain	Treat. Start	Food	Media	Treatment application	Vector
Oleic acid	CCCCCCCC\C=C/CCCCCCCC(O)=O	n.d. [20]	Lifespan	Logrank and mean lifespan	Detrimental	n.d.	N2	n.d.	n.d.	NGM agar	n.d.	n.d.
		600 µM [21]	Lifespan	Logrank	No effect	n.d.	N2	A	n.d.	NGM agar	n.d.	0.1% NP-40
		0.8 mM [22]	Lifespan	Logrank and mean lifespan	Improved	n.d.	N2	L1	OP50	S medium	Added to agar	0.001% Tergitol
Palmitoleic acid	O=C(O)CCCCCCC\C=C/CCCCCC	0.8 mM [22]	Lifespan	Logrank and mean lifespan	Improved	n.d.	N2	L1	OP50	S medium	Added to agar	0.001% Tergitol
Cis-vaccenic acid	CCCCCC/C=C\CCCCCCCCCC(=O)O	0.8 mM [22]	Lifespan	Logrank and mean lifespan	Improved	n.d.	N2	L1	OP50	S medium	Added to agar	0.001% Tergitol
Linoleic acid	CCCCC/C=C\C/C=C\CCCCCCCC(=O)O	0.8 mM [22]	Lifespan	Logrank and mean lifespan	No effect	n.d.	N2	L1	OP50	S medium	Added to agar	0.001% Tergitol
α-Linolenic acid	CC/C=C\C/C=C\C/C=C\CCCCCCCC(=O)O	0.8 mM [22]	Lifespan	Logrank and mean lifespan	Detrimental	n.d.	N2	L1	OP50	S medium	Added to agar	0.001% Tergitol

Table SI 4. Hydroxycinnamates

Compound	Structure (Smiles)	Dose [Ref]	Experiment	Parameters	Effect	Involved Genes	Strain	Treat. Start	Food	Media	Treatment application	Vector
4-Coumaric acid	C1=CC(=CC=C1/C=C/C(=O)O)O	40, 80, and 200 µM [23]	Proteintoxicity	Paralsis assay with temperature-dependent amyloid beta expression in muscless	Improved	n.d.	CL4176	L1	n.d.	NGM agar	Added to the NGM	n.d.
3-Coumaric acid	C1=CC(=CC(=C1)O)/C=C/C(=O)O	40, 80, and 200 µM [23]	Proteintoxicity	Paralsis assay with temperature-dependent amyloid beta expression in muscless	Improved	n.d.	CL4176	L1	n.d.	NGM agar	Added to the NGM	n.d.
2-Coumaric acid	C1=CC=C(C(=C1)/C=C/C(=O)O)O	40, 80, and 200 µM [23]	Proteintoxicity	Paralsis assay with temperature-dependent amyloid beta expression in muscless	Improved	n.d.	CL4176	L1	n.d.	NGM agar	Added to the NGM	n.d.
Caffeic acid	C1=CC(=C(C=C1/C=C/C(=O)O)O)O	40, 80, and 200 µM [23]	Proteintoxicity	Paralsis assay with temperature-dependent amyloid beta expression in muscless	Improved	n.d.	CL4176	L1	n.d.	NGM agar	Added to the NGM	n.d.
2,4-Dihydroxycinnamic acid	C1=CC(=C(C=C1O)O)/C=C/C(=O)O	40, 80, and 200 µM [23]	Proteintoxicity	Paralsis assay with temperature-dependent amyloid beta expression in muscless	Improved	n.d.	CL4176	L1	n.d.	NGM agar	Added to the NGM	n.d.
3,4,5-Trihydroxycinnamic acid	C1=C(C=C(C(=C1O)O)O)/C=C/C(=O)O	40, 80, and 200 µM [23]	Proteintoxicity	Paralsis assay with temperature-dependent amyloid beta expression in muscless	Improved	n.d.	CL4176	L1	n.d.	NGM agar	Added to the NGM	n.d.
Chlorogenic acid	C1[C@H]([C@H]([C@@H](C[C@@]1(C(=O)O)O)OC(=O)/C=C/C2=CC(=C(C=C2)O)O)O)O	100 µM [24]	Lifespan	Mean and Median Lifespan	Improved	daf-16	N2	L4	UV-inactivated OP50	NGM agar	Pipetted onto NGM	n.d.
		100 µg/ml ≙ 282.2 µM [25]	UV stress survival	Induced with daily UV-C treatment (45 s/day)	Improved	n.d.	N2	A	OP50	NGM agar	n.d.	0% DMSO
		200 µg/ml ≙ 564.4 µM [26]	Lifespan	Mean and maximum lifespan	Improved	n.d.	N2	A	OP50	NGM agar	n.d.	0% DMSO
			ROS stress survival	Induced 10 mM paraquat	Improved							
		54 µg/ml ≙ 152 µM [27]	Lifespan	Mean lifespan	Improved	n.d.	N2	A	OP50	S medium	Diluted in liquid	n.d. concentration of DMSO
			Proteotoxicity	Paralsis assay with temperature-dependent amyloid beta expression in muscless	Improved		CL4176	n.d.		NGM agar	Pipetted onto NGM	
		400 µg/ml ≙ 1.13 mM [28]	Proteotoxicity	Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image processing	No effect	n.d.	OW13	L4	OP50	NGM agar	Spread on top of NGM plates seeded with OP50	0.1% DMSO

		80 µg/ml ≙ 110.1 µM [29]	Lifespan	Median and maximum lifespan	No effect	n.d.	N2	L4	OP50	NGM agar	Added to the NGM	0% DMSO
					No effect		CL4176					
			Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	No effect			L1				
1,5-Dicaffeoylquinic acid	C1[C@H]([C@@H]([C@@H](C[C@]1(C(=O)O)OC(=O)C=CC2=CC(=C(C=C2)O)O)OC(=O)C=CC3=CC(=C(C=C3)O)O)O)O	15 µg/ml ≙ 29 µM [27]	Lifespan	Mean lifespan	Improved	n.d.	N2	A	OP50	S medium	Diluted in liquid	n.d. concentration of DMSO
			Proteintoxicity	Paralsis assay with temperature-dependent amyloid beta expression in muscless	Improved		CL4176	n.d.		NGM agar	Pipetted onto NGM	
Cynarine	C1[C@H]([C@H]([C@@H](C[C@@]1(C(=O)O)OC(=O)/C=C/C2=CC(=C(C=C2)O)O)OC(=O)/C=C/C3=CC(=C(C=C3)O)O)O)O	7.5 µg/ml ≙ 14.5 µM [27]	Lifespan	Mean lifespan	Improved	n.d.	N2	A	OP50	S medium	Diluted in liquid	n.d. concentration of DMSO
			Proteotoxicity	Paralsis assay with temperature-dependent amyloid beta expression in muscles	Improved		CL4176	n.d.		NGM agar	Pipetted onto NGM	
6-Gingerol	CCCCC[C@@H](CC(=O)CCC1=CC(=C(C=C1)O)OC)O	12.5 and 25 µM [10]	Lifespan	Mean lifespan	Improved	n.d.	N2	L1	OP50	NGM agar	Diluted in autoclaved NGM	0.1% DMSO
			Locomotion	Travel range/speed	No effect							
			Pharyngeal pumping	Pumping rate	No effect							
			Autofluorescence	Microscopy and image processing (n.d. filter)	Improved							
			Thermal stress survival	Induced with 37°C	Improved							
			ROS stress survival	Induced with 1 mM juglone	Improved							
			Hypertonic stress survival	Induced with 500 mM NaCl	Improved							
			Antioxidative capacity	Measurement of intracellular dichlorofluorescein fluorescence after incubation with juglone	Improved							
Kavain	COC1=CC(=O)OC(C1)/C=C/C2=CC=CC=C2	40 and 80 µM [13]	Lifespan elongation	Mean lifespan under high-glucose concentration	Improved	n.d.	N2	L4	OP50	NGM agar	n.d.	n.d.

Table SI 5. Gallates, tannins and derived metabolites

Compound	Structure (Smiles)	Dose [Ref]	Experiment	Parameters	Effect	Involved Genes	Strain	Treat. Start	Food	Media	Treatment application	Vector
Catechol	C1=CC=C(C(=C1)O)O	100 – 300 µM [11]	Neurodegeneration	Paralysis assay with age-dependent TDP-43 toxicity of GABAergic neurons	Improved	n.d	Trangene worm with genotype unc-47p::TDP-43A315T	L4	OP50	NGM agar	Added to the NGM	0% DMSO
				Neurodegeneration monitored by GFP tagged unc-47 in GABAergic neurons	Improved		Trangene worm with genotype unc-47p::GFP					
Gallic acid	C1=C(C=C(C(=C1O)O)O)C(=O)O	100 – 300 µM [11]	Neurodegeneration	Paralysis assay with age-dependent TDP-43 toxicity of GABAergic neurons	Improved	n.d.	Trangene worm with genotype unc-47p::TDP-43A315T	L4	OP50	NGM agar	Added to the NGM	n.d.
				Neurodegeneration monitored by GFP tagged unc-47 in GABAergic neurons	Improved		Trangene worm with genotype unc-47p::GFP					
Catechin	C1[C@@H]([C@H](OC2=CC(=CC(=C21)O)O)C3=CC(=C(C=C3)O)O)O	200 µM [30]	Lifespan elongation	Median and maximal lifespan	Improved	bec-1 and pink-1	N2	L1	OP50	NGM agar	Diluted in OP50 stock	n.d.
			Locomotion	Number of body bends	Improved							
				Speed	Improved							
		10 µM [8]	ROS stress survival	Induced with 250 µM juglone	Improved	n.d.	N2	L1	OP50	S medium	Diluted in liquid	0.1% DMSO
Epicatechin	C1[C@H]([C@H](OC2=CC(=CC(=C21)O)O)C3=CC(=C(C=C3)O)O)O	100 µM [20]	Thermal/osmotic stress survival	Induced with 37 °C and 10 mM glucose	No effect	n.d.	N2	Adult	OP50	M9 buffer with 1% Tween-20	Diluted in liquid	0% DMSO
Epicatechin gallate	C1[C@H]([C@H](OC2=CC(=CC(=C21)O)O)C3=CC(=C(C=C3)O)O)OC(=O)C4=CC(=C(C(=C4)O)O)O	100 µM [31]	Thermal/osmotic stress survival	Induced with 37 °C and 10 mM glucose	No effect	n.d.	N2	Adult	OP50	M9 buffer with 1% Tween-20	Diluted in liquid	0% DMSO
Epigallocatechin	C1[C@H]([C@H](OC2=CC(=CC(=C21)O)O)C3=CC(=C(C(=C3)O)O)O)O	100 µM [31]	Thermal/osmotic stress survival	Induced with 37 °C and 10 mM glucose	No effect	n.d.	N2	Adult	OP50	M9 buffer with 1% Tween-20	Diluted in liquid	0% DMSO
Epigallocatechin gallate	C1[C@H]([C@H](OC2=CC(=CC(=C21)O)O)C3=CC(=C(C(=C3)O)O)O)OC(=O)C4=CC(=C(C(=C4)O)O)	50 µg/ml ≙ 109 µM [14]	Locomotion	Number of body bends	No effect	n.d.	N2	L1	OP50	NGM agar	Diluted in autoclaved NGM	0% DMSO
			Pharyngeal pumping	Pumping rate	No effect							
			Antioxidative capacity	Measurement of dichlorofluorescein fluorescence during incubation at 37 °C	Improved							
			Thermal stress survival	Induced with 35 °C	Improved							
		100 µM [31]	Thermal/osmotic	Induced with 37 °C and 10 mM glucose	No effect	n.d.	N2	A	OP50	M9 buffer	Diluted in liquid	0% DMSO

			stress survival							with 1% Tween-20		
		25 and 50 µg/ml ≙ 54.5 and 109 µM) [32]	Lifespan	Mean and median lifespan	Improved	skn-1, daf-16	N2	A	OP50	S medium	Diluted in liquid	0% DMSO
			ROS stress survival	Induced with 80 µM juglone	Improved			L1				
			ROS levels	Measurement of dichlorofluorescein fluorescence	Improved							
			Nuclear translocation	DAF-16::GFP	Improved		TJ356	L4				
				SKN-1:GFP	No effect		LD1					
		25 µg/ml ≙ 54.5 µM [33]	Pharyngeal pumping	Pumping rate	Improved	daf-16	N2	L4	OP50	NGM agar	Diluted in OP50 stock	1% DMSO
			Autofluorescence	Microscopy and image processing (360-370/460 nmfilter)	Improved		BA17					
			ROS stress survival	Induced with 80 µM juglone	Improved		N2	L1		S Medium	Diluted in liquid	
			ROS levels	Measurment of dichlorofluorescein fluorescence	Improved							
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
				SKN-1:GFP	No effect		LD1					
		25 µg/ml ≙ 54.5 µM [34]	Pharyngeal pumping	Pumping rate	Improved	daf-16	N2	L4	OP50	NGM agar	Added to the OP50 lawn	1% DMSO
			Autofluorescence	Microscopy and image processing (360/ 460 nm filter)	Improved			L1		S medium	Diluted in liquid	
			ROS stress survival	Induced with 80 µM juglone	Improved							
			ROS levels	Measurement of dichlorofluorescein fluorescence	Improved							
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
				SKN-1:GFP	No effect		LD1					
		25, 50 and 100 µg/mL [35]	ROS stress survival	Induced with 80 µM juglone	Improved	daf-16	N2	L1	OP50	S medium	Diluted in liquid	0% DMSO
			Antioxidative capacity	Measurement of dichlorofluorescein fluorescence after treatment with juglone	Improved							
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
		50 µg/ml ≙ 109 µM [36]	ROS stress survival	Induced with 80 µM juglone	Improved	daf-16	N2	L1	OP50	S medium	Diluted in liquid	0% DMSO
			ROS levels	Measurment of dichlorofluorescein fluorescence	Improved							
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
		50 µg/ml ≙ 109 µM [37]	ROS stress survival	Induced with 80 µM juglone	Improved	daf-16	N2	L1	OP50	S medium	Diluted in liquid	0% DMSO
			Antioxidative capacity	Measurement of dichlorofluorescein fluorescence after treatment with juglone	Improved							
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
		50 µg/ml ≙ 109 µM [38]	ROS stress survival	Induced with 80 µM juglone	Improved	n.d.	N2	L1	OP50	NGM agar	n.d.	2.1% MeOH
			ROS levels	Measurement of dichlorofluorescein fluorescence	Improved							
Ellagic acid	C1=C2C3=C(C(=C1O)O)OC(=O)C4=CC(=C(C(=C43)OC2=O)O)O	1, 2, 5, 10, 25, and 50 µM [39]	Lifespan	Mean lifespan	No effect	n.d.	N2	L4	OP50	S medium	Diluted in liquid	0.05% DMSO
		50 µM [40]	Lifespan	Mean lifespan	No effect	n.d.	N2	L1	OP50	NGM agar	Diluted in autoclaved NGM	1% DMSO
			Locomotion	Measured with Worm Tracker (Arbitrary mobility units)	No effect							
			Pharyngeal Pumping	Pumping rate	Improved							

Urolithin A	C1=CC2=C(C=C1O)C(=O)OC3=C2C=CC(=C3)O	1, 2, 5, 10, 25, and 50 μM [39]	Lifespan	Mean lifespan	No effect	n.d.	N2	L4	OP50	S medium	Diluted in liquid	0.05% DMSO
		(10, 20 and 50 μM) [40]	Lifespan	Mean lifespan	Improved	bec-1, pdr-1, sqst-1, skn-1, vps-34 and pink-1	N2	L1	OP50	NGM agar	Diluted in autoclaved NGM	1% DMSO
				Mean lifespan	Improved				UV-inactivated OP50			
			Locomotion	Measured with Worm Tracker (Arbitrary mobility units)	Improved				OP50			
				Muscle fiber organization	Improved		SJ4103					
			Pharyngeal Pumping	Pumping rate	Improved		N2					
			ROS stress survival	Induced with 4 mM paraquart	Improved							
Urolithin B	C1=CC=C2C(=C1)C3=C(C=C(C=C3)O)OC2=O	50 μM [40]	Lifespan	Mean lifespan	Improved	n.d.	N2	L1	OP50	NGM agar	Diluted in autoclaved NGM	1% DMSO
			Locomotion	Measured with Worm Tracker (Arbitrary mobility units)	Improved							
			Pharyngeal Pumping	Pumping rate	Improved							
Urolithin C	C1=CC2=C(C=C1O)OC(=O)C3=CC(=C(C=C23)O)O	50 μM [40]	Lifespan	Mean lifespan	Improved	n.d.	N2	L1	OP50	NGM agar	Diluted in autoclaved NGM	1% DMSO
			Locomotion	Measured with Worm Tracker (Arbitrary mobility units)	No effect							
			Pharyngeal Pumping	Pumping rate	Improved							
Urolithin D	C1=CC(=C(C2=C1C3=CC(=C(C=C3C(=O)O2)O)O)O)O	50 μM [40]	Lifespan	Mean lifespan	Improved	n.d.	N2	L1	OP50	NGM agar	Diluted in autoclaved NGM	1% DMSO
			Locomotion	Measured with Worm Tracker (Arbitrary mobility units)	No effect							
			Pharyngeal Pumping	Pumping rate	Improved							
Pentagalloylglucoese	C1=C(C=C(C(=C1O)O)O)C(=O)OC[C@@H]2[C@H]([C@@H]([C@H]([C@@H](O2)OC(=O)C3=CC(=C(C(=C3)O)O)O)OC(=O)C4=CC(=C(C(=C4)O)O)O)OC(=O)C5=CC(=C(C(=C5)O)O)O)OC(=O)C6=CC(=C(C(=C6)O)O)O	(40, 80, 120, 160 μM) [41]	Lifespan elongation	median lifespan	Improved	daf-16, age-1, eat-2, sir-2.1, and isp-1	N2	L1	OP50	NGM agar	Diluted in OP50 stock	0.2% DMSO
			Locomotion	Number of body bends	Not improved							
			Pharyngeal Pumping	Pumping rate	Not improved							
			Autofluorescence	Plate reader (emission 430 nm)	Not improved							
			ROS levels	Measurment of dichlorofluorescein fluorescence	Not improved							
			Thermal stress survival	Induced with 35 °C	Improved							

Table SI 6. Diarylheptanoids

Compound	**Structure (Smiles)**	**Dose [Ref]**	**Experiment**	**Parameters**	**Effect**	**Involved Genes**	**Strain**	**Treat. Start**	**Food**	**Media**	**Treatment application**	**Vector**
Curcumin	COC1=C(C=CC(=C1)/C=C/C(=O)CC(=O)/C=C/C2=CC(=C(C=C2)O)OC)O	10, 20, 100, and 200 μM [42]	ROS stress survival	Induced with 250 μ M juglone	Improved	age-1, akt-1, pdk-1, osr-1, unc-43, sek-1, skn-1, sir-2.1, and mev-1	N2	L1	OP50	S Medium	Diluted in liquid	0.1% DMSO
			ROS levels	Measurment of dichlorofluorescein fluorescence	Improved							
		100 μM [43]	Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	Improved	n.d.	CL4176	L1	OP50	NGM agar	Diluted in OP50 stock	0.1% DMSO

Table SI 7. Flavonoids

Compound	Structure (Smiles)	Dose [Ref]	Experiment	Parameters	Effect	Involved Genes	Strain	Treat. Start	Food	Media	Treatment application	Vector
Isoliquiritigenin	C1=CC(=CC=C1/C=C/C(=O)C2=C(C=C(C=C2)O)O)O	2 mM [44]	Lifespan	T_{50}	Improved	n.d.	NL5901	A	OP50	NGM agar	n.d.	4% DMSO
			Proteotoxicity	Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image processing	No effect							
4,4′-Dimethoxychalcone	COC1=CC=C(C=C1)/C=C/C(=O)C2=CC=C(C=C2)OC	41.6 µM [45]	Lifespan	Median lifespan	Improved	atg-5	N2	L1	UV-inactivated OP50	NGM agar	Added to the OP50 lawn	n.d.
Aspalathin	C1=CC(=C(C=C1CCC(=O)C2=C(C=C(C(=C2O)[C@H]3[C@@H]([C@H]([C@@H]([C@H](O3)CO)O)O)O)O)O)O)O	10, 20 and 50 µM [53]	Lifespan	Mean life span	No effect	daf-16, sod-3	N2	A	OP50	NGM agar	Added to OP50	n.d.
				Mean life span under high glucose (50 mM) conditions	Improved							
			ROS stress survival	Induced with 400 µM juglone	Improved			L1				
			ROS levels	Measurement of dichlorofluorescein fluorescence	Improved							
Myricetin	C1=C(C=C(C(=C1O)O)O)C2=C(C(=O)C3=C(C=C(C=C3O2)O)O)O	100 µM [46]	Lifespan elongation	Mean Lifespan	Improved	daf-16	N2	L4	Heat-inactivated OP50	Liquid NGM	Diluted in liquid	0.1% DMSO
			Autofluorescence	Microscopy and image processing (360-370/420-460 nm filter)	Improved							
			Antioxidative capacity	Measurment of intracellular dichlorofluorescein fluorescence after incubation at 37 °C with spectrophotometer	No effect							
			Thermal stress survival	Induced with 37 °C	No effect							
		100 µM [47]g	Lifespan	Mean, median and maximal lifespan	Improved	daf-16	N2	L4	Heat-inactivated OP50	NGM agar	Added to the OP50 lawn	0.2% Ethanol: Tween 80 (92:8)
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
Tangeretin	COC1=CC=C(C=C1)C2=CC(=O)C3=C(O2)C(=C(C(=C3OC)OC)OC)OC	30 and 100 µM [60]	Lifespan	Mean, median and maximal lifespan	Improved	daf-16	N2	L4	OP50	NGM agar	Diluted in the OP50 stocks	n.d.
			Locomotion	Number of body bends	Improved							
				Motility classes	Improved							
			Pharyngeal pumping	Pumping rate	Improved							
			ROS stress survival	Induced with 8 mM H_2O_2	Improved							
			Antioxidative capacity	Measurement of dichlorofluorescein fluorescence after incubation with H_2O_2	No effect							
			Thermal stress survival	Induced with 35 °C	Improved							
			Nuclear translocation	DAF-16::GFP	Improved		MAH97	L1				
Baicalein	C1=CC=C(C=C1)C2=CC(=O)C3=C(O2)C=C(C(=C3O)O)O	25, 50 and 100 µM [48]	Lifespan	Median and maximum life span	Improved	skn-1	N2	L4	OP50	Liquid NGM	Diluted in liquid	0.1% DMSO
			Pharyngeal pumping	Pumping rate	No effect		N2	L4				
			ROS stress survival	Induced with 5 mM sodium arsenite	Improved		N2	L4				
			Thermal stress survival	Induced with 37 °C	Improved		N2	L4				
			Nuclear translocation	DAF-16::GFP	No effect		TJ356	L4				
Quercetin	C1=CC(=C(C=C1C2=C(C(=O)C3=C(C=C(C=C3O2)O)O)O)O)O	100 µM [47]g	Lifespan	Mean, median and maximal lifespan	Improved	daf-16	N2	L4	Heat-inactivated OP50	NGM agar	Added to the OP50 lawn	0.2% Ethanol: Tween 80 (92:8)
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					

		100 µM [49]	Lifespan	Mean, minimum, median and maximum lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	Added to the NGM	0.05% DMSO
		200 µM [50]	Lifespan	n.d.	Improved		N2	L4	OP50	NGM agar supplemented with 10–15 mM glucose	Added to the NGM	n.d. concentration of DMSO
		10 µM [8]	ROS stress survival	Induced with 250 µM juglone	Improved	n.d.	N2	L1	OP50	S medium	Diluted in liquid	0.1% DMSO
		200 µM [51]	Thermal stress survival	Induced with 35 °C	Improved	n.d.	N2	L1	Heat-inactivated OP50	NGM agar	Diluted in NGM	0.1% DMSO
		12.5 µg/ml ≙ 41 µM [52]	Lifespan	Mean lifespan	Improved		N2	L4	OP50	NGM agar	n.d.	0% DMSO
			thermal stress survival	Induced with 35 °C	Improved							
		50 µM [53]	ROS stress survival	Induced with 0.5mM H_2O_2	Improved		N2	L1	OP50	NGM agar	Diluted in autoclaved NGM	0% DMSO
			Thermal stress survival	Induced with 35 °C	Improved							
		3.3, 33 and 300 µM [54]	Lifespan	Survival after 14 days	Improved	mtl-2	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO
			Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	Improved		CL2659	L3				
				Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image processing	Improved		NL5901	L4				
		10 µM [6]	Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	No effect	n.d.	CL2659	L3	OP50	S medium	Diluted in liquid	1% DMSO
Kaempferol	O=c1c(O)c(-c2ccc(O)cc2)oc2cc(O)cc(O)c12	100 µM [47g]	Lifespan	Mean, median and maximal lifespan	Improved	daf-16	N2	L4	Heat-inactivated OP50	NGM agar	Added to the OP50 lawn	0.2% Ethanol: Tween 80 (92:8)
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
Naringenin	O=C2c3c(O[C@H](c1ccc(O)cc1)C2)cc(O)cc3O	100 µM [47g]	Lifespan	Mean, median and maximal lifespan	No effect	daf-16	N2	L4	Heat-inactivated OP50	NGM agar	Added to the OP50 lawn	0.2% Ethanol: Tween 80 (92:8)
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
Maackiain	C1[C@@H]2[C@H](C3=C(O1)C=C(C=C3)O)OC4=CC5=C(C=C24)OCO5	50 and 250 µM [55]	Lifespan elongation	Mean lifespan of animals treated with 6-OHDA	Improved	pink-1	N2	L1	OP50	NGM agar	Added to the prepared plates before OP50 were seeded	n.d.
			Proteintoxicity	Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image processing	Improved		NL5901	L3				
			Neurodegeneration	6-OHDA induced neurodegeneration monitored by GFP tagged dopamine transporter expression	Improved		BZ555	L1				
Brazilin	C1C2=CC(=C(C=C2[C@H]3[C@@]1(COC4=C3C=CC(=C4)O)O)O)O	50 and 100 µM [56]	Lifespan	Mean lifespan	Improved	n.d.	N2	L1	OP50	Solid agar	Diluted in autoclaved NGM	0.1% DMSO
			Locomotion	Travel range/ Speed	Improved							
			Pharyngeal pumping	Pumping rate	No effect							
			Thermal stress survival	Induced with 37°C	Improved							
			ROS stress survival	Induced with 900 µM juglone	Improved							
			Hypertonic stress survival	Induced with 500 mM NaCl	Improved							
			Antioxidative capacity	Measurment of intracellular dichlorofluorescein fluorescence after incubation with juglone	Improved							
Vitexin	C1=CC(=CC=C1C2=CC(=O)C3=C(O2)C(	10.35 µg/mL ≙ 23.9 µM [57]	Lifespan	Mean Lifespan	No effect	n.d.	N2	L4	Heat-inactivated OP50	S Medium	Diluted in liquid	0.6% DMSO

	=C(C=C3O)O)[C@H]4[C@@H]([C@H]([C@@H]([C@H](O4)CO)O)O)O)O											
Isovitexin	C1=CC(=CC=C1C2=CC(=O)C3=C(O2)C=C(C(=C3O)[C@H]4[C@@H]([C@H]([C@@H]([C@H](O4)CO)O)O)O)O)O	20.99 µg/mL ≙ 48.6 µM [57]	Lifespan	Mean Lifespan	Improved	n.d.	N2	L4	Heat-inactivated OP50	S Medium	Diluted in liquid	0.6% DMSO
		2 and 20 µg/ml ≙ 4.6 and 46.2 µM [58]	Thermal stress survival	Induced with 37 °C	Improved			L1	UV inactivated W3110			1% DMSO
			ROS stress survival	Induced with 250 µM juglone	No effect							
			ROS levels	Measurement of dichlorofluorescein fluorescence	Improved							
Liquiritin	C1[C@H](OC2=C(C1=O)C=CC(=C2)O)C3=CC=C(C=C3)O[C@H]4[C@@H]([C@H]([C@@H]([C@H](O4)CO)O)O)O	2 mM [44]	Lifespan	T_{50}	Improved	n.d.	NL5901	Adult	OP50	NGM agar	n.d.	4% DMSO
			Proteotoxicity	Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image processing	No effect							
Orientin	C1=CC(=C(C=C1C2=CC(=O)C3=C(O2)C(=C(C=C3O)O)[C@H]4[C@@H]([C@H]([C@@H]([C@H](O4)CO)O)O)O)O)O	25, 50, 100 and 200 µM [59]	Lifespan	Mean Lifespan	Improved	daf-16, daf-2, age-1, akt-1, akt-2, sir-2.1, aak-2, isq-1, mev-1, glp-1, hsf-1 and clk-1	N2	L4	Heat-inactivated OP50	NGM agar	Sprayed onto NGM	0% DMSO
			Locomotion	Number of body bends	Improved							
			Autofluorescence	Microscopy and image processing (n.d. filter)	Improved							
			ROS stress survival	Induced with 20 mM paraquat	Improved							
			Antioxidative capacity	Measurement of dichlorofluorescein fluorescence after incubation with paraquat	Improved							
			Thermal stress survival	Induced with 35 °C	Improved							
			Nuclear translocation	DAF-16::GFP	No effect		TJ356					
			Proteintoxicity	Paralysis assay with constitutive age -dependent polyglutamine aggregation in muscles	Improved		AM141					
				Paralysis assay with temperature-dependent amyloid beta expression in muscles	Improved		CL4176	L1				
				Number of body bends of aged muscle α-synuclein expressing worms	Improved		NL5901	n.d.				
				Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image processing	Improved			n.d.				
			Neurodegeneration	6-OHDA induced neurodegeneration monitored by GFP tagged dopamine transporter expression	Improved		BZ555	L3				
Astragalin	C1=CC(=CC=C1C2=C(C(=O)C3=C(C=C(C=C3O2)O)O)O[C@H]4[C@@H]([C@H]([C@@H]([C@H](O4)CO)O)O)O)O	2 µg/ml ≙ 4.5 µM [60]	Lifespan	Mean lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	Added to NGM and OP50	0.05%
			Locomotion	Wave initiation rate, activity index, brush stroke and body wave number	No effect							
			Thermal stress survival	Induced with 37 °C	Improved							
Myricitrin	C[C@H]1[C@@H]([C@H]([C@H]([C@@H](O1)OC2=C(OC3=CC(=CC(=C3C2=O)O)O)C4=CC(=	10 µM [8]	ROS stress survival	Induced with 250 µM juglone	Improved	n.d.	N2	L1	OP50	S medium	Diluted in liquid	0.1% DMSO

	C(C(=C4)O)O)O)O)O)O											
Quercitrin	C[C@H]1[C@@H]([C@H]([C@H]([C@@H](O1)OC2=C(OC3=CC(=CC(=C3C2=O)O)O)C4=CC(=C(C=C4)O)O)O)O)O	10 µM [8]	ROS stress survival	Induced with 250 µM juglone	Improved	n.d.	N2	L1	OP50	S medium	Diluted in liquid	0.1% DMSO
Quercetin 3-O-β-D-apiofuranoside	OC1=C(CC(O)=C(C2=CC(O)=C(O)C=C2)O3)C3=CC(O[C@H]4[C@H](O)[C@](CO)(O)CO4)=C1	2 and 20 µg/ml ≙4.6 and 46.1 µM [58]	Thermal stress survival	Induced with 37 °C	No effect	n.d.	N2	L1	UV-inactivated W3110	S medium	Diluted in liquid	1% DMSO
			ROS stress survival	Induced with 250 µM juglone	Improved							
			ROS levels	Measurement of dichlorofluorescein fluorescence	Improved							
Swertisin	COC1=C(C(=C2C(=C1)OC(=CC2=O)C3=CC=C(C=C3)O)O)[C@H]4[C@@H]([C@H]([C@@H]([C@H](O4)CO)O)O)O	50, 250 and 500 µM [61]	Thermal stress survival	Induced with 35 °C	Improved	n.d.	N2	L1	OP50	NGM agar	Added to OP50	n.d.
			ROS stress survival	Induced with 0.01% H_2O_2	Improved							
			Antioxidative capacity	Measurement of dichlorofluorescein fluorescence after incubation at 35 °C	Improved							
Naringin	C[C@H]1[C@@H]([C@H]([C@H]([C@@H](O1)O[C@@H]2[C@H]([C@@H]([C@H](O[C@H]2OC3=CC(=C4C(=O)C[C@H](OC4=C3)C5=CC=C(C=C5)O)O)CO)O)O)O)O)O	50 µM [62]	Lifespan	Mean Lifespan	Improved	daf-16, daf-2, akt-1, akt-2, hsf-1, clk-1, rsks-1	N2	L4	OP50 Heat-inactivated OP50	NGM agar	Added to the prepared plates	0% DMSO
			Locomotion	Number of body bends					OP50			
			Autofluorescence	Microscopy and image processing (GFP filter)								
			ROS stress survival	Induced with 20 mM paraquart								
			Antioxidative capacity	Measurement of dichlorofluorescein fluorescence after treatment with H_2O_2								
			Thermal stress survival	Induced with 35 °C								
			Proteintoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles			CL4176					
				Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image processing			NL5901	n.d.				
			Neurodegeneration	6-OHDA induced neurodegeneration monitored by GFP tagged dopamine transporter expression			BZ555	L3				
			Nuclear translocation	DAF-16::GFP			TJ356	L3				
Lonicerin	C[C@H]1[C@@H]([C@H]([C@H]([C@@H](O1)O[C@@H]2[C@H]([C@@H]([C@H](O[C@H]2OC3=CC(=C4C(=C3)OC(=CC4=O)C5=CC(=C(C=C5)O)O)O)CO)O)O)O)O)O	2 and 20 µg/ml ≙ 3.4 and 33.6 µM [58]	Thermal stress survival	Induced with 37 °C	No effect	n.d.	N2	L1	UV inactivated W3110	S medium	Diluted in liquid	1% DMSO
			ROS stress survival	Induced with 250 µM juglone	No effect							
			ROS levels	Measurement of dichlorofluorescein fluorescence	Improved							
Rutin	C[C@H]1[C@@H](	163 - 1310	ROS stress survival	Induced with 100 mM H_2O_2	No effect	n.d.	N2	A	No food	S Medium	Diluted in liquid	0.7% EtOH

	[C@H]([C@H]([C@@H](O1)OC[C@@H]2[C@H]([C@@H]([C@H]([C@@H](O2)OC3=C(OC4=CC(=CC(=C4C3=O)O)O)C5=CC(=C(C=C5)O)O)O)O)O)O)O)O	µM [63]		Induced with 100 µM juglone	Improved							
				Induced with 100 µM Fe^{2+}	Improved							
				Induced with 50 mM sodium nitroprusside	Improved							
		100 µM [64]	Lifespan	Mean and maximum lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	Added to the NGM	0.2% DMSO
			Locomotion	Motility classes	Improved							
		80 µg/ml ≙ 131 µM [29]	Lifespan	Median and maximum lifespan	No effect	n.d.	N2	L4	OP50	NGM agar	Added to the NGM	0% DMSO
					No effect		CL4176					
			Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	No effect			L1				
Kaempferol 3-O-(2″-glucopyranosyl)-rutinoside	O(C1=C(OC=2C(C1=O)=C(O)C=C(O)C2)C3=CC=C(O)C=C3)[C@H]4[C@H](O[C@@H]5O[C@H](CO)[C@@H](O)[C@H](O)[C@H]5O)[C@@H](O)[C@H](O)[C@@H](CO[C@H]6[C@H](O)[C@H](O)[C@@H](O)[C@H](C)O6)O4	0.24 µg/mL ≙ 317 nM [65]	ROS stress survival	Induced with 250 µM juglone	Improved	n.d.	N2	L1	OP50	S Medium	Diluted in liquid	n.d.
Camelliaside B	O(C1=C(OC=2C(C1=O)=C(O)C=C(O)C2)C3=CC=C(O)C=C3)[C@H]4[C@H](O[C@H]5[C@H](O)[C@@H](O)[C@H](O)CO5)[C@@H](O)[C@H](O)[C@@H](CO[C@H]6[C@H](O)[C@H](O)[C@@H](O)[C@H](C)O6)O4	0.21 µg/mL ≙ 289 nM [65]	ROS stress survival	Induced with 250 µM juglone	Improved	n.d.	N2	L1	OP50	S Medium	Diluted in liquid	n.d.
Apigenin 6-C-[β-D-apiofuranosyl-(1 → 2)]β-D-glucopyranoside	O=C1C=C(OC2=CC(O)=C(C(O)=C21)[C@@H]3O[C@@H]([C@H]([C@@H]([C@H]3O[C@H]4[C@@H]([C@](O)(CO4)CO)O)O)O)CO)C5=CC=C(C=C5)O	2 and 20 µg/ml ≙ 3.5 and 35.4 µM [58]	Thermal stress survival	Induced with 37 °C	Improved	n.d.	N2	L1	UV inactivated W3110	S medium	Diluted in liquid	1% DMSO
			ROS stress survival	Induced with 250 µM juglone	Improved							
			ROS levels	Measurement of dichlorofluorescein fluorescence	Improved							
Luteolin 6-C-[β-D-apiofuranosyl-(1 → 2)]-β-D-glucopyranoside	O=C1C=C(OC2=CC(O)=C(C(O)=C21)[C@@H]3O[C@@H]([C@H]([C@@H]([C@H]3O[C@H]4[C@@H]([C@](O)(CO4)CO)O)O)O)CO)C5=CC(O)=C(C=C5)O	2 and 20 µg/ml ≙ 3.4 and 34.5 µM [58]	Thermal stress survival	Induced with 37 °C	Improved	n.d.	N2	L1	UV inactivated W3110	S medium	Diluted in liquid	1% DMSO
			ROS stress survival	Induced with 250 µM juglone	Improved							
			ROS levels	Measurement of dichlorofluorescein fluorescence	Improved							
Silybin A	OC[C@@H]1[C@	50 µM [66]	Proteotoxicity	Paralysis assay with temperature-dependent	No effect	n.d.	CL4176	L3	OP50	NGM agar	n.d.	1% DMSO

	@H](C2=CC(OC)=C(C=C2)O)OC3=CC(C4OC5=CC(O)=CC(O)=C5C([C@@H]4O)=O)=CC=C3O1			amyloid beta expression in muscles							
Silybin B	C(O)[C@H]1[C@@H](OC=2C(O1)=CC=C(C2)[C@H]3OC=4C(C(=O)[C@@H]3O)=C(O)C=C(O)C4)C5=CC(OC)=C(O)C=C5	50 µM [66]	Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	Improved	n.d.	CL4176	L3	OP50	NGM agar	n.d.	1% DMSO
Silybin A/B (10 µM)	OCC1C(C2=CC(OC)=C(C=C2)O)OC3=CC(C4OC5=CC(O)=CC(O)=C5C([C@@H]4O)=O)=CC=C3O1	10 µM [67]	Lifespan	Mean lifespan	Improved	n.d.	N2	Adult	UV-inactivated OP50	NGM agar	Added onto bacterial lawn	DMSO (1%)
Isosilybin A	COC1=C(C=CC(=C1)[C@@H]2[C@H](OC3=C(O2)C=CC(=C3)[C@@H]4[C@H](C(=O)C5=C(C=C(C=C5O4)O)O)O)CO)O	10 µM [67]	Lifespan	Mean lifespan	Improved	n.d.	N2	Adult	UV-inactivated OP50	NGM agar	Added onto bacterial lawn	DMSO (1%)
Silychristin A/B,	COC1=C(C=CC(=C1)[C@H]2[C@@H](C3=C(O2)C(=CC(=C3)[C@@H]4[C@H](C(=O)C5=C(C=C(C=C5O4)O)O)O)O)CO)O	10 µM [67]	Lifespan	Mean lifespan	Improved	n.d.	N2	Adult	UV-inactivated OP50	NGM agar	Added onto bacterial lawn	DMSO (1%)
Silydianin A/B	COC1=C(C=CC(=C1)[C@@H]2[C@H]3CO[C@@]4([C@H]3C(=C[C@H]2C4=O)[C@@H]5[C@H](C(=O)C6=C(C=C(C=C6O5)O)O)O)O)O	10 µM [67]	Lifespan	Mean lifespan	Improved	n.d.	N2	Adult	UV-inactivated OP50	NGM agar	Added onto bacterial lawn	DMSO (1%)
Dehydrosilybin A	OC[C@@H]1[C@@H](C2=CC(OC)=C(C=C2)O)OC3=CC(C(OC4=CC(O)=CC(O)=C45)=C(O)C5=O)=CC=C3O1	10 µM [67]	Lifespan	Mean lifespan	Improved	fgt-1, daf-16	N2	Adult	UV-inactivated OP50	NGM agar	Added onto bacterial lawn	DMSO (1%)
		50 µM [66]	Proteotoxicity	Paralyzed with amyloid beta in muscles	Improved	n.d.	CL4176	L3	OP50	NGM agar	n.d.	DMSO (1%)
Dehydrosilybin B	OC[C@H]1[C@H](C2=CC(OC)=C(C=C2)O)OC3=CC(C(OC4=CC(O)=CC(O)=C45)=C(O)C5=O)=C	10 µM [67]	Lifespan	Mean lifespan	Improved	fgt-1, daf-16	N2	Adult	UV-inactivated OP50	NGM agar	Added onto bacterial lawn	DMSO (1%)
		50 µM [66]	Proteotoxicity	Paralyzed with amyloid beta in muscles	Improved	n.d.	CL4176	L3	OP50	NGM agar	n.d.	DMSO (1%)

	C=C3O1											
2,3-Dehydrosilybin A/B	OCC1C(C2=CC(OC)=C(C=C2)O)OC3=CC(C(OC4=CC(O)=CC(O)=C45)=C(O)C5=O)=CC=C3O1	5, 10 and 20 μM [67]	Lifespan	Mean lifespan	Improved	fgt-1, daf-16	N2	Adult	UV-inactivated OP50	NGM agar	Added onto bacterial lawn	DMSO (1%)
			Pharyngeal Pumping	Pumping rate	Improved			L1				
			ROS stress survival	Induced with 80 μM juglone	Improved							
			Proteotoxicity	Paralyzed with amyloid beta in muscles	Improved		GMC101					
				GFP tagged amyloid beta expression in muscles, Microscopy & image processing	Improved		CL2331					
7-Methoxy-dehydrosilybin A/B	OCC1C(C2=CC(OC)=C(C=C2)O)OC3=CC(C(OC4=CC(OC)=CC(O)=C45)=C(O)C5=O)=CC=C3O1	10 μM [67]	Lifespan	Mean lifespan	No effect	n.d.	N2	Adult	UV-inactivated OP50	NGM agar	Added onto bacterial lawn	DMSO (1%)
3,7- Dimethoxy-dehydrosilybin A/B	OCC1C(C2=CC(OC)=C(C=C2)O)OC3=CC(C(OC4=CC(OC)=CC(O)=C45)=C(OC)C5=O)=CC=C3O1	10 μM [67]	Lifespan	Mean lifespan	Detrimental	n.d.	N2	Adult	UV-inactivated OP50	NGM agar	Added onto bacterial lawn	DMSO (1%)
20-galloyl-dehydrosilybin A/B	O=C(C1=CC(O)=C(C(O)=C1)O)OC2=CC=C(C3OC4=C(OC3CO)C=CC(C(OC5=C6C(O)=CC(O)=C5)=C(O)C6=O)=C4)C=C2OC	10 μM [67]	Lifespan	Mean lifespan	No effect	n.d.	N2	Adult	UV-inactivated OP50	NGM agar	Added onto bacterial lawn	DMSO (1%)
Cyanidin 3-O-glucoside	C1=CC(=C(C=C1C2=[O+]C3=CC(=CC(=C3C=C2O[C@H]4[C@@H]([C@H]([C@@H]([C@H](O4)CO)O)O)O)O)O)O.[Cl-]	154 µg/ml ≙ 347.3 µM [29]	Lifespan	Median and maximum lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	Added to the NGM	0% DMSO
					Improved		CL4176	L1				
			Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	Improved							

Table SI 8. Stilbenes

Compound	Structure (Smiles)	Dose [Ref]	Experiment	Parameters	Effect	Involved Genes	Strain	Treat. Start	Food	Media	Treatment application	Vector
Resveratrol	OC1=CC(/C=C/C2=CC=C(O)C=C2)=CC(O)=C1	100 µM [68]	Lifespan	Mean lifespan	Improved	n.d.	N2	L1	OP50	NGM agar	Poured into petri dishes before OP50 were seeded	0.2% DMSO
		100 µM [53]	Lifespan	Mean lifespan	Improved	n.d.	N2	L1	OP50	NGM agar	Diluted in autoclaved NGM	0% DMSO
		100 µm [41]	Lifespan	median lifespan	Improved	n.d.	N2	L1	OP50	NGM agar	Diluted in OP50 stock	0.2% DMSO
		50, 100, or 200 µm [69]	Lifespan	Mean lifespan	No effect	n.d.	N2	A	OP50	NGM agar	Added to NGM	
					Detrimental					S-medium	Diluted in liquid	
					Improved					NGM agar supplemented with 50 mM glucose	Added to NGM	
			ROS stress survival	Induced with 0.4 mM juglone	Improved			L1		S-medium	Diluted in liquid	
		100 µM [70]	Lifespan	Mean and maximum lifespan	No effect	n.d.	N2	L4	Heat-inactivated OP50	Liquid NGM	Diluted in liquid	0.1% DMSO
			Locomotion	Motility classes	No effect	n.d.						
			Antioxidative capacity	Measurement of dichlorofluorescein fluorescence during incubation at 37 °C	No effect	n.d.						
			Thermal stress survival	Induced with 37 ◦C	No effect	n.d.						
			Nuclear translocation	DAF-16::GFP	No effect	n.d.	TJ356	L1				
				SKN-1::GFP	No effect	n.d.	LD1					
		100. 500 and 1000 µM [71]	Lifespan	Mean lifespan	Improved	sir-2.1	N2	A	OP50	NGM agar	Added to NGM	0.3% DMSO
		100 µM [72]	Lifespan	Mean, median, maximal lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	Diluted in OP50 stock	0.2% DMSO
			Autofluorescence	Microscopy and image processing (365/420 nm filter)	Improved							
		500 µM [73]	Lifespan	Mean lifespan	Improved	daf-16, skn-1, hsf-1	N2	L1	n.d.	NGM agar	n.d.	n.d. concentration of DMSO n.d.
			ROS stress survival	Induced with 10 mM paraquart	Improved							
			Thermal stress survival	Induced with 35 °C	Improved							
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
Oxyresveratrol	C1=CC(=C(C=C1O)O)/C=C/C2=CC(=CC(=C2)O)O	100. 500 and 1000 µM [71]	Lifespan	Mean lifespan	Improved	sir-2.1	N2	A	OP50	NGM agar	Added to NGM	0.3% DMSO
		25, 50 and 100 µM [72]	Lifespan	Mean, median, maximal lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	Diluted in OP50 stock	0.2% DMSO
			Autofluorescence	Microscopy and image processing (365/420 nm filter)	Improved							
		10,25,50 and 100 µM [74]	Lifespan	Mean lifespan measured by lifespan machine	Improved	n.d.	N2	L4	Heat-inactivated OP50	NGM agar	Added to the prepared plates	1% DMSO
Pterostilbene	COC1=CC(=CC(=C1)/C=C/C2=CC=C(C=C2)O)OC	100 µM [70]	Antioxidative capacity	Measurement of dichlorofluorescein fluorescence during incubation at 37 °C	No effect	n.d.	N2	L4	Heat-inactivated OP50	Liquid NGM	Diluted in liquid	0.1% DMSO
trans-4’hydroxy-3,4,5-	FC1=C(F)C(F)=CC(/C=C/C2=CC=C(O)C=C2)=C1	100 µM [70]	Antioxidative capacity	Measurement of dichlorofluorescein fluorescence during incubation at 37 °C	No effect	n.d.	N2	L4	Heat-inactivated OP50	Liquid NGM	Diluted in liquid	0.1% DMSO

trifluorostilbene												
trans-2,5-dimethoxy-4’hydroxystilbene	OC(C=C1)=CC=C1/C=C/C2=CC(OC)=CC(OC)=C2	100 µM [70]	Antioxidative capacity	Measurement of dichlorofluorescein fluorescence during incubation at 37 °C	No effect	n.d.	N2	L4	Heat-inactivated OP50	Liquid NGM	Diluted in liquid	0.1% DMSO
trans-3, 5-dimethoxy-4-fluoro-4’-hydroxystilbene	FC1=C(C=C(/C=C/C2=CC=C(O)C=C2)C=C1OC)OC	100 µM [70]	Lifespan	Mean and maximum lifespan	Improved	skn-1, daf-16, sir-2.1	N2	L4	Heat-inactivated OP50	Liquid NGM	Diluted in liquid	0.1% DMSO
			Locomotion	Motility classes	Improved							
			Antioxidative capacity	Measurement of dichlorofluorescein fluorescence during incubation at 37 °C	Improved							
			Thermal stress survival	Induced with 37 ◦C	No effect							
			Nuclear translocation	DAF-16::GFP	No effect		TJ356	L1				
				SKN-1::GFP	No effect		LD001					
trans-2,4’,5-trihydroxystilbene	OC1=CC(/C=C/C2=CC=C(O)C=C2)=C(O)C=C1	100 µM [70]	Lifespan	Mean and maximum lifespan	Improved	skn-1, daf-16, sir-2.1	N2	L4	Heat-inactivated OP50	Liquid NGM	Diluted in liquid	0.1% DMSO
			Locomotion	Motility classes	Improved							
			Antioxidative capacity	Measurement of dichlorofluorescein fluorescence during incubation at 37 °C	Improved							
			Thermal stress survival	Induced with 37 °C	No effect							
			Nuclear translocation	DAF-16::GFP	No effect		TJ356	L1				
				SKN-1::GFP	No effect		LD1					

Table SI 9. Lignans

Compound	**Structure (Smiles)**	**Dose [Ref]**	**Experiment**	**Parameters**	**Effect**	**Involved Genes**	**Strain**	**Treat. Start**	**Food**	**Media**	**Treatment application**	**Vector**
Pinoresinol	COC1=C(C=CC(=C1)[C@@H]2[C@H]3CO[C@@H]([C@H]3CO2)C4=CC(=C(C=C4)O)OC)O	2 µg/ml ≙ 5.9 µM [60]	Lifespan	Mean lifespan	No effect	n.d.	N2	L4	OP50	NGM agar	Added to agar and bacteria	0.05%
			Locomotion	Wave initiation rate, activity index, brush stroke and body wave number	No effect							
			Thermal stress survival	Induced with 37°C	Improved							
Sesamin	C1[C@H]2[C@H](CO[C@@H]2C3=CC4=C(C=C3)OCO4)[C@H](O1)C5=CC6=C(C=C5)OCO6	28, 28, 56 and 300 µM [54]	Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	Improved	mtl-2	CL2659	L3	OP50	S medium	Diluted in liquid	1% DMSO
				Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image processing	Improved		NL5901	L4				

Table SI 10. Polyketides

Compound	Structure (Smiles)	Dose [Ref]	Experiment	Parameters	Effect	Involved Genes	Strain	Treat. Start	Food	Media	Treatment application	Vector
Emodin	CC1=CC2=C(C(=C1)O)C(=O)C3=C(C2=O)C=C(C=C3O)O	3.7, 37, 74 and 400 µM [54]	Lifespan	Survival on day 18 compared to control	Improved	mtl-2	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO
			Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	Improved		CL2659	L3				
			Proteotoxicity	Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image processing	Improved		NL5901	L4				
		0, 50, 150, and 300 µM [75]	Lifespan elongation	Mean lifespan	Improved	daf-16	N2	L4	Heat-inactivated OP50	NGM agar	Mixed with OP50	0.01% DMSO
			ROS stress survival	Induced with 30 mM of paraquat	Improved			L4				
			Antioxidant capacity	Measurment of dichlorofluorescein fluorescence during incubation at 37 °C	Improved							
			Thermal stress survival	Induced with 37 ◦C	Improved							
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
				SKN-1::GFP	No effect		LD1					
Cannabidiol	Oc1c(c(O)cc(c1)CCCCC)[C@@H]2\C=C(/CC[C@H]2\C(=C)C)C	5 µM [76]	Lifespan	Mean lifespan	Improved	n.d.	CL2122	L1	OP50	NGM agar	Diluted in OP50 stock	0.05% DMSO
					Improved		CL2355					
			Locomotion	Exploration assay; scored how many squares of a petri dish grid are entered by the worms	No effect		CL2122					
					Improved		CL2355					
			Pharyngeal Pumping	Pumping rate	No effect		CL2122					
					Improved		CL2355					
		0.4, 4 , 10 , 40 , 100, 400 µM, and 4 mM [77]	Lifespan	Mean and maximum lifespan	Improved	n.d.	N2	A	OP50	Liquid NGM	Added to NGM	0.2% DMSO
			Locomotion	Flow Cell recording; displacement of individual animals from the rectangular area (bounding box) that encloses their whole body	Improved	n.d.						
			Thermal stress survival	Induced with 37 °C	Improved	n.d.						
		5% [78]	ROS levels	Measurment of dichlorofluorescein fluorescence	Improved	n.d.	N2	L4	OP50	NGM agar	n.d.	ultrapure olive oil
			Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	Improved		GMC101					
		1, 5 and 10 µM [79]	Lifespan	n.d.	Improved	*bec-1, vps-34, sqst-1, sir-2.1, aak-2*	N2	L1	OP50	NGM agar	Diluted in autoclaved NGM	n.d. concentration of DMSO
			Pharyngeal pumping	Pumping rate	Improved							
			Autophagy	GFP::LGG-1 marked autophagic vesicles were counted in body-wall muscle, proximal intestinal cells, and terminal pharyngeal bulb	Improved		DA2123					
				GFP::LGG-1 marked autophagic vesicles were counted in nerve-ring neurons	Improved		MAH242					
(−)-trans-Δ9-Tetrahydrocannabinol	CCCCCc1cc(c2c(c1)OC([C@H]3[C@H]2C=C(CC3)C)(C)C)O	2.5% [78]	ROS levels	Measurment of dichlorofluorescein fluorescence	Improved	n.d.	N2	L4	OP50	NGM agar	n.d.	ultrapure olive oil
			Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	No effect		GMC101					
Tetracylcine	C[C@]1(c2cccc(c2C(=O)C3=C([C@]4([C@@H](C[C@@H]31)[C@@H](C(=C(C4=O)C(=O)N)O)N(C)C)O)O)O)O	50 µM [80]	Proteotoxicity	Paralysis assay with constitutive amyloid beta expression in muscles	Improved	n.d.	CL2006	L3	OP50	NGM agar	n.d.	0% DMSO
				Paralysis assay with temperature-dependent amyloid beta expression in muscles	Improved		CL4176					

Table SI 11. Betalaine

Compound	Structure (Smiles)	Dose [Ref]	Experiment	Parameters	Effect	Involved Genes	Strain	Treat. Start	Food	Media	Treatment application	Vector
Aniline-betaxanthin	O=C([O-])C1=C/C(C[C@@H](C([O-])=O)N1)=C/C=N/C2=CC=CC=C2	25 µM [81]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	No effect	n.d.	N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO
Betanidin	C1[C@H](N=C(C=C1/C=C/N2[C@@H](CC3=CC(=C(C=C32)O)O)C(=O)O)C(=O)O)C(=O)O	25 µM [81]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	No effect	n.d.	N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO
Betanin	C1[C@@H](N=C(C=C1/C=C/N2[C@@H](CC3=CC(=C(C=C32)O)O[C@H]4[C@@H]([C@H]([C@@H]([C@H](O4)CO)O)O)O)C(=O)O)C(=O)O)C(=O)O	25 µM [81]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	No effect	n.d.	N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO
		10, 25, 50 and 100 µM [82]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	No effect		N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO
Dopaxanthin	C(/C=N/[C@@H](CC1=CC(O)=C(O)C=C1)C(O)=O)=C\2/C[C@@H](C(O)=O)NC(C(O)=O)=C2	25 µM [81]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	Improved	daf-16	N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
Indicaxanthin	C(=CC=1C[C@@H](C(O)=O)N=C(C(O)=O)C1)N2[C@H](C(O)=O)CCC2	25 µM [81]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	Improved	daf-16	N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
				SKN-1::GFP	No effect		LD001					
		10, 25, 50 and 100 µM [82]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	Improved	n.d.	N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO
Indoline carboxylic acid-betacyanin	O=C([O-])C1=C/C(C[C@@H](C([O-])=O)N1)=C/C=[N+]2C(C=CC=C3)=C3C=C\2C(O)=O	25 µM [81]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	Improved	daf-16, skn-1	N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
				SKN-1::GFP	Improved		LD001					
Indoline betacyanin	O=C([O-])C1=C/C(C[C@@H](C([O-])=O)N1)=C/C=[N+]2C(C=CC=C3)=C3C=C\2	10, 25, 50 and 100 µM [82]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	Improved	n.d.	N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO
Miraxanthin I	C(C=N[C@@H](CCS(C)=O)C(O)=O)=C1CC(C(O)=O)NC(C(O)=O)=C1	25 µM [81]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	Improved	n.d.	N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO
Phenylalanine-	O=C([O-	25 µM [81]	Lifespan	Mean lifespan after 2 d of treatment measured	Improved	daf-16	N2	L1	Heat-inactivated	Liquid	Diluted in liquid	0% DMSO

betaxanthin	])C1=C/C(C[C@@H](C([O-])=O)N1)=C/C=N\C(C(O)=O)CC2=CC=CC=C2			by lifespan machine					OP50	M9/S medium mixture		
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
Phenylethylamine-betaxanthin	O=C([O-])C1=C/C(C[C@@H](C([O-])=O)N1)=C/C=N\C(C(O)=O)CC2=CC=CC=C2	10, 25, 50 and 100 µM [82]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	Improved	n.d.	N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO
Pyrrolidine-betaxanthin	O=C([O-])C1=C/C(C[C@@H](C([O-])=O)N1)=C/C=[N+]2CCCC/2	25 µM [81]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	Improved	n.d.	N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO
Tryptophan-betaxanthin	O=C([O-])C1=C/C(C[C@@H](C([O-])=O)N1)=C/C=NC(C(O)=O)CC2=CNC3=C2C=CC=C3	25 µM [81]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	No effect	n.d.	N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO
Valine-betaxanthin	O=C([O-])C1=C/C(C[C@@H](C([O-])=O)N1)=C/C=NC(C(O)=O)C(C)C	25 µM [81]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	No effect	n.d.	N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO
Vulgaxanthin I	C(\C=N[C@@H](CCC(N)=O)C(O)=O)=C/1\C[C@@H](C(O)=O)NC(C(O)=O)=C1	25 µM [81]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	Improved	n.d.	N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO
Vulgaxanthin II	C(\C=N[C@@H](CCC(O)=O)C(O)=O)=C/1\C[C@@H](C(O)=O)NC(C(O)=O)=C1	25 µM [81]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	Improved	n.d.	N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO
Vulgaxanthin III	C(\C=N[C@@H](CC(N)=O)C(O)=O)=C/1\C[C@@H](C(O)=O)NC(C(O)=O)=C1	25 µM [81]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	No effect	n.d.	N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO
Vulgaxanthin IV	C(\C=N[C@@H](CC(C)C)C(O)=O)=C/1\C[C@@H](C(O)=O)NC(C(O)=O)=C1	25 µM [81]	Lifespan	Mean lifespan after 2 d of treatment measured by lifespan machine	No effect	n.d.	N2	L1	Heat-inactivated OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO

Table SI 12. Amino acids and peptides

Compound	Structure (Smiles)	Dose [Ref]	Experiment	Parameters	Effect	Involved Genes	Strain	Treat. Start	Food	Media	Treatment application	Vector
L-Theanine	CCNC(=O)CC[C@H](N)C(=O)O	0.1, 1 and 10 µM [83]	Lifespan	Mean and maximum lifespan	Improved	n.d.	N2	L4	Heat-inactivated OP50	NGM agar	n.d.	n.d.
			ROS stress survival	Induced with 10 mM paraquart	Improved							
		50, 100, and 200 µg/ml ≙ 287.0, 574.1 and 1148.1 µM [84]	Lifespan	Mean lifespan	No effect	n.d.	N2	L1	OP50	NGM agar	Diluted in OP50 stock	0% DMSO
			ROS stress survival	Induced with 0.5 mM juglone	Improved						Diluted in OP50 stock	
			Thermal stress survival	Induced with 35 °C	Improved							
L-Citrulline	NC(CCCNC(N)=O)C(O)=O	n.d. [18]	ROS stress survival	Induced with 300 µM juglone	Improved	n.d.	N2	L1	OP50	Solid agar	Added to the NGM before OP50 were spread	0.05–0.1% MeOH
Peptide LSDRLEETGGASS		2 and 4 mM [85]	ROS stress survival	Induced with 50 mM paraquat	Improved	daf-16	N2	A	NA22	S medium	Diluted in liquid	0% DMSO
			Nuclear translocation	DAF-16::GFP	Improved		GR1352	L3				
Peptide KEGCREPETEKGHR		2 and 4 mM [85]	ROS stress survival	Induced with 50 mM paraquat	Improved	daf-16	N2	A	NA22	S medium	Diluted in liquid	0% DMSO
			Nuclear translocation	DAF-16::GFP	Improved		GR1352	L3				
Peptide IVTNWDDMEK		2 and 4 mM [85]	ROS stress survival	Induced with 50 mM paraquat	Improved	daf-16	N2	A	NA22	S medium	Diluted in liquid	0% DMSO
			Nuclear translocation	DAF-16::GFP	Improved		GR1352	L3				

Table SI 13. Macrolides

Compound	Structure (Smiles)	Dose [Ref]	Experiment	Parameters	Effect	Involved Genes	Strain	Treat. Start	Food	Media	Treatment application	Vector
Rapamycin	O[C@@H]1CC[C@H](C[C@H]1OC)C[C@@H](C)[C@@H]4CC(=O)[C@H](C)/C=C(\C)[C@@H](O)[C@@H](OC)C(=O)[C@H](C)C[C@H](C)\C=C\C=C\C=C(/C)[C@@H](OC)C[C@@H]2CC[C@@H](C)[C@@](O)(O2)C(=O)C(=O)N3CCCC[C@H]3C(=O)O4	100 µM [86]	Lifespan	Maximum and mean lifespan	Improved	n.d.	N2	L4	n.d.	NGM agar	n.d.	n.d. concentration of DMSO

Table SI 14. Terpenes

Compound	Structure (Smiles)	Dose [Ref]	Experiment	Parameters	Effect	Involved Genes	Strain	Treat. Start	Food	Media	Treatment application	Vector
Limonene	CC1=CCC(CC1)C(=C)C	5, 25 and 50 μM [87]	Lifespan	Mean lifespan	Improved	n.d.	N2	L1	OP50	NGM agar	Added to the OP50 lawn	0.1% DMSO
					Improved				heat-inactivated OP50			
			ROS stress survival	Induced with paraquart	Improved				OP50			
			Antioxidative capacity	Measurment of intracellular dichlorofluorescein fluorescence after incubation at 37 °C	Improved							
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
Aucubin	C1=CO[C@H]([C@H]2[C@@H]1[C@@H](C=C2CO)O)O[C@H]3[C@@H]([C@H]([C@@H]([C@H](O3)CO)O)O)O	100 μM [24]	Lifespan	Mean and Median Lifespan	Improved	daf-16, mev-1	N2	L4	UV inactivated OP50	NGM agar	Pipetted onto NGM	n.d.
Geniposide	COC(=O)C1=CO[C@H]([C@H]2[C@@H]1CC=C2CO)O[C@H]3[C@@H]([C@H]([C@@H]([C@H](O3)CO)O)O)O	100 μM [24]	Lifespan	Mean and Median Lifespan	Improved	daf-16, mev-1	N2	L4	UV inactivated OP50	NGM agar	Pipetted onto NGM	n.d.
Geniposidic acid	C1C=C([C@@H]2[C@H]1C(=CO[C@H]2O[C@H]3[C@@H]([C@H]([C@@H]([C@H](O3)CO)O)O)O)C(=O)O)CO	100 μM [24]	Lifespan	Mean and Median Lifespan	Improved	n.d.	N2	L4	UV inactivated OP50	NGM agar	Pipetted onto NGM	n.d.
Asperuloside	CC(=O)OCC1=C[C@H]2[C@H]3[C@@H]1[C@@H](OC=C3C(=O)O2)O[C@H]4[C@@H]([C@H]([C@@H]([C@H](O4)CO)O)O)O	100 μM [24]	Lifespan	Mean and Median Lifespan	Improved	daf-16, mev-1	N2	L4	UV inactivated OP50	NGM agar	Pipetted onto NGM	n.d.
4-Hydroxy-E-globularinin	C(OC(/C=C/C1=CC=C(O)C=C1)=O)[C@]2(O)[C@@]3([C@]([C@H](O)[C@@H]2O)(C=CO[C@H]3O[C@@H]4O[C@H](CO)[C@@H](O)[C@H](O)[C@H]4O)[H])[H]	2, 20 and 200 μM [88]	Lifespan	Mean lifespan	Improved	daf-16	N2	L1	OP50	NGM agar	Added to NGM and OP50	0% DMSO
			Pharyngeal pumping	Pumping rate	Improved							
			ROS stress survival	Induced with 10 mM paraquart	Improved							
			ROS levels	Measurement of dichlorofluorescein fluorescence	Improved							
			Nuclear translocation	DAF-16::GFP	Improved		TJ356	L4				
Oleuropein	O=C(OCCc1ccc(O)c(O)c1)C[C@H]2C(	500 μg/ml ≙ 925.1 μM [16]	Locomotion	Wave initiation rate, body wave number and activity index of muscle α-synuclein expressing	Improved	n.d.	OW13	L4	n.d.	n.d.	n.d.	n.d.

	=C/C)\[C@@H](O\C=C2\C(=O)OC)O[C@@H]3O[C@@H]([C@@H](O)[C@H](O)[C@H]3O)CO			worms								
				Wave initiation rate, body wave number and activity index of worms treated with 10 µM rotenone	Improved		N2					
			Thermal stress survival	Induced with 37 ◦C	Improved							
			Proteotoxicity	Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image processing	Improved		OW13					
		40, 180, 440 µM [73]	Lifespan	Mean lifespan	Improved	daf-16, skn-1, hsf-1	N2	L1	n.d.	NGM agar	n.d.	n.d. concentration of DMSO n.d.
			ROS stress survival	Induced with 10 mM paraquart	Improved							
			Thermal stress survival	Induced with 35 °C	Improved							
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
		12.5–500 µM [80]	Lifespan	Median lifespan	No effect	n.d.	CL806	L2	OP50	NGM agar	n.d.	n.d. concentration of DMSO
					Improved		CL2006					
			Proteotoxicity	Paralysis assay with constitutive amyloid beta expression in muscles	Improved			L1				
								L2				
								L3				
				Paralysis assay with temperature-dependent amyloid beta expression in muscles	Improved		CL4176	L1				
					No effect			L2				
								L3				
β-caryophyllene	C1(=C)\CC/C=C(/CC[C@@H]2[C@@H]1CC2(C)C)C	25 µM, 50 µM and 100 µM [89]	Lifespan elongation	Mean lifespan	Improved	eat-2, sir-2.1 and skn-1	N2	L1			Pipetted onto NGM	0.1% DMSO
					Improved				Heat killed OP50			
					Improved			A	OP50			
			ROS stress survival	Induced with paraquart	Improved			L1				
			Pharyngeal pumping	Pumping rate	Detrimental							
			Autofluorescence	Microscopy and image processing (340-380/435-480 nm filter)	Improved							
			ROS stress survival	Induced with 250 µM H_2O_2	Improved							
			ROS levels	Measurment of intracellular dichlorofluorescein fluorescence	Improved							
			Thermal stress survival	Induced with 35 °C	Improved							
			Nuclear translocation	DAF-16::GFP	Improved		TJ356					
Celaspermin A	C[C@@]12[C@]3([C@H](OC(C)=O)[C@](C(C)(C)O3)(C(OC(C)=O)[C@@H]1OC(=O)C4=CC=CC=C4)[H])[C@H](C)C[C@@H](OC(C)=O)[C@@H]2OC(C)=O	50 µM [86]	Lifespan	Maximum and mean lifespan	Improved	n.d.	N2	L4	n.d.	NGM agar	n.d.	n.d. concentration of DMSO
Celaspermin B	C[C@@]12[C@]3([C@H](OC(=O)C4=CC=CC=C4)[C@](C(C)(C)O3)(C(OC(C)=O)[C@@H]1OC(=	50 µM [86]	Lifespan	Maximum and mean lifespan	Improved	n.d.	N2	L4	n.d.	NGM agar	n.d.	n.d. concentration of DMSO

	O)C5=CC=CC=C5)[H])[C@H](C)C[C@@H](OC(C)=O)[C@@H]2OC(C)=O											
Celaspermin D	C[C@@]12[C@]3([C@H](OC(C)=O)[C@](C(C)(C)O3)(C(OC(C)=O)[C@H]1OC(=O)C4=CC=CC=C4)[H])[C@H](C)C[C@@H](OC(C)=O)[C@@H]2OC(C)=O	50 µM [86]	Lifespan	Maximum and mean lifespan	Improved	n.d.	N2	L4	n.d.	NGM agar	n.d.	n.d. concentration of DMSO
Celaspermin E	C[C@@]12[C@]3([C@H](OC(C)=O)[C@](C(C)(C)O3)(C(OC(C)=O)[C@H]1OC(=O)C4=CC=CC=C4)[H])[C@H](C)CC(=O)[C@@H]2OC(C)=O	50 µM [86]	Lifespan	Maximum and mean lifespan	Improved	n.d.	N2	L4	n.d.	NGM agar	n.d.	n.d. concentration of DMSO
Celaspermin F	C[C@@]12[C@]3([C@H](OC(C)=O)[C@](C(C)(C)O3)(C[C@@H]1OC(=O)C4=CC=CC=C4)[H])[C@H](C)C[C@@H](OC(C)=O)[C@@H]2OC(C)=O	50 µM [86]	Lifespan	Maximum and mean lifespan	Improved	n.d.	N2	L4	n.d.	NGM agar	n.d.	n.d. concentration of DMSO
Celaspermin K	C[C@@]12[C@]3([C@H](OC(C)=O)[C@](C(C)(C)O3)(C(OC(C)=O)[C@H]1OC(=O)C4=CC=CC=C4)[H])[C@H](C)C[C@H](OC(/C=C/C5=CC=CC=C5)=O)[C@@H]2OC(C)=O	50 µM [86]	Lifespan	Maximum and mean lifespan	Improved	n.d.	N2	L4	n.d.	NGM agar	n.d.	n.d. concentration of DMSO
Celaspermin L	C(OC(C)=O)[C@@]12[C@]3([C@H](OC(C)=O)[C@@](C(OC(C)=O)[C@@H]1OC(=O)C4=CC=CC=C4)(C(C)(C)O3)[H])[C@H](C)C[C@H](OC(C)=O)[C@@H]2OC(C)=O	50 µM [86]	Lifespan	Maximum and mean lifespan	Improved	n.d.	N2	L4	n.d.	NGM agar	n.d.	n.d. concentration of DMSO
Celaspermin O	C[C@@]12[C@]3(C[C@](C(C)(C)O3)([C@H](OC(C)=O)[C@@H]1OC(=O)C4=CC=CC=C4)[H])[	50 µM [86]	Lifespan	Maximum and mean lifespan	Improved	n.d.	N2	L4	n.d.	NGM agar	n.d.	n.d. concentration of DMSO

	C@H](C)C[C@H](OC(C)=O)[C@H]2OC(C)=O											
1α-Hydroxy-6β,8α-Diacetoxy-9α -benzoyloxy-β-dihydroagarofuran	C[C@@]12[C@]3([C@H](OC(C)=O)[C@](C(C)(C)O3)(C(OC(C)=O)[C@H]1OC(=O)C4=CC=CC=C4)[H])[C@H](C)CC[C@@H]2O	50 µM [86]	Lifespan	Maximum and mean lifespan	Improved	n.d.	N2	L4	n.d.	NGM agar	n.d.	n.d. concentration of DMSO
Celaspaculin D	C(OC(C)=O)[C@@]12[C@]3(C[C@@]([C@H](OC(C)=O)[C@H]1OC(=O)C=4C=COC4)(C(C)(C)O3)[H])[C@H](C)CC[C@@H]2OC(C)=O	50 µM [90]	Lifespan	Mean and maximum lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	n.d.	n.d. concentration of DMSO
Celaspaculin E	C(OC(C)=O)[C@@]12[C@]3([C@H](OC(C)=O)[C@@](C(OC(C)=O)[C@H]1OC(=O)C=4C=COC4)(C(C)(C)O3)[H])[C@@](C)(O)CC[C@@H]2OC(C)=O	50 µM [90]	Lifespan	Mean and maximum lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	n.d.	n.d. concentration of DMSO
Celaspaculin H	C(OC(C)=O)[C@@]12[C@]3([C@H](OC(C)=O)[C@](C(C)(C)O3)(C(OC(C)=O)[C@@H]1OC(=O)C=4C=COC4)[H])[C@H](C)CC[C@@H]2OC(C)=O	50 µM [90]	Lifespan	Mean and maximum lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	n.d.	n.d. concentration of DMSO
Celaspaculin J	C(OC(C)=O)[C@@]12[C@]3([C@H](OC(C)=O)[C@@]([C@@H](OC(C)=O)[C@@H]1OC(=O)C=4C=COC4)(C(C)(C)O3)[H])[C@@](C)(O)CC[C@@H]2OC(C)=O	50 µM [90]	Lifespan	Mean and maximum lifespan	No effect	n.d.	N2	L4	OP50	NGM agar	n.d.	n.d. concentration of DMSO
Celaspaculin K	C(O)[C@@]12[C@]3(C[C@@]([C@H](OC(C)=O)[C@@H]1OC(=O)C=4C=COC4)(C(C)(C)O3)[H])[C@H](C)CC[C@@H]2OC(C)=O	50 µM [90]	Lifespan	Mean and maximum lifespan	No effect	n.d.	N2	L4	OP50	NGM agar	n.d.	n.d. concentration of DMSO
Celaspaculin L	C(OC(C)=O)[C@@]12[C@]3(C[C@@]([C@H](OC(C)=O)[	50 µM [90]	Lifespan	Mean and maximum lifespan	No effect	n.d.	N2	L4	OP50	NGM agar	n.d.	n.d. concentration of

	C@@H]1OC(=O)C=4C=COC4)(C(C)(C)O3)[H])[C@H](C)C[C@@H](OC(C)=O)[C@@H]2OC(C)=O											DMSO
Celaspaculin M	C(OC(C)=O)[C@@]12[C@]3([C@H](OC(C)=O)[C@@](C(OC(C)=O)[C@@H]1OC(=O)C=4C=COC4)(C(C)(C)O3)[H])[C@@](C)(O)CC[C@@H]2OC(C)=O	50 µM [90]	Lifespan	Mean and maximum lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	n.d.	n.d. concentration of DMSO
Celaspaculin N	C(O)[C@@]12[C@]3(C(OC(C)=O)[C@]([C@](C)(C)O3)([C@H](OC(=O)C=4C=COC4)[C@@H]1OC(=O)C=5C=COC5)[H])[C@@](C)(O)CC[C@@H]2OC(C)=O	50 µM [90]	Lifespan	Mean and maximum lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	n.d.	n.d. concentration of DMSO
1α,6β,8β,15-Tetraacetoxy-9α-benzoyloxydihydro-β-agarofuran	C(OC(C)=O)[C@@]12[C@]3([C@H](OC(C)=O)[C@@](C(OC(C)=O)[C@H]1OC(=O)C4=CC=CC=C4)(C(C)(C)O3)[H])[C@H](C)CC[C@@H]2OC(C)=O	50 µM [90]	Lifespan	Mean and maximum lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	n.d.	n.d. concentration of DMSO
1α,6β,15-Triacetoxy-8β,9β-difuroyloxy-4β-hydroxydihydro-β-agarofuran	C(OC(C)=O)[C@@]12[C@]3(C(OC(C)=O)[C@@]([C@H](OC(=O)C=4C=COC4)[C@@H]1OC(=O)C=5C=COC5)([C@](C)(C)O3)[H])[C@@](C)(O)CC[C@@H]2OC(C)=O	50 µM [90]	Lifespan	Mean and maximum lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	n.d.	n.d. concentration of DMSO
trans-Communic acid	C[C@@]12[C@]([C@](C(O)=O)(C)CCC1)(CCC(=C)[C@@H]2C/C=C(/C=C)\C)[H]	1, 10 and 50 µM [91]	Lifespan	Mean lifespan	Improved	n.d.	N2	L4	OP50	S-medium	Diluted in liquid	n.d.
			ROS stress survival	Induced with 0.4 M paraquat	Improved			Adult				
			Thermal stress survival	Induced with 35 °C	Improved			L4				
Ginkgolide A	O[C@@]12C34[C@]5(C6([C@](O3)(OC(=O)[C@@H]6O)[H])[C@H](C(C)(C)C)C[C@]5(OC4=O)[H])C[C@@]1(OC(=O)[C@H]2C)[H]	25 µM [92]	Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	Improved	n.d.	CL4176	L1	OP50	NGM agar	n.d.	0.2% DMSO

Withanolide A (100 µM) [93]	C[C@@]12[C@@]3([C@@]([C@]4([C@](O4)([C@@]1(O)CC=CC2=O)[H])[H])([C@]5([C@](C)(CC3)[C@@]([C@@](C)(O)[C@]6(CC(C)=C(C)C(=O)O6)[H])(CC5)[H])[H])[H])[H]	100 µM [93]	Lifespan	Mean lifespan	Improved	ser-1, ser-4	N2	L4	OP50	NGM agar	n.d.	0.1% DMSO
			ROS stress survival	Induced with 300 µM juglone	Improved			L1				
			ROS levels	Measurment of dichlorofluorescein fluorescence	Improved			L4				
			Thermal stress survival	Induced with 37 °C	Improved							
		5 µM [94]	Lifespan	Mean and median lifespan	Improved	sgk-1	N2	L4	OP50	NGM agar	Added to the OP50 lawn	0.1% DMSO
		2, 5, 25 and 50 µM [95]	Lifespan	Mean and median lifespan	Improved	skn-1, daf-16, hsf-1, sgk-1	N2	L4	OP50	NGM agar	Added to the OP50 lawn	0.1% DMSO
			Locomotion	Number of body bends	Improved							
			Pharyngeal pumping	Pumping rate	No effect			L1				
			Autofluorescence	Microscopy and image processing (365/420 nm filter)	Improved			L4				
			ROS stress survival	Induced with 10 mM paraquart	Improved							
			ROS levels	Measurment of dichlorofluorescein fluorescence	Improved							
			Thermal stress survival	Induced with 37 °C	Improved							
			Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	Improved		CL4176	L1				
				Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image processing	Improved		NL5901	L4				
			Nuclear translocation	DAF-16::GFP	No effect		TJ356	L4				
Ginsenoside Rg1	C[C@]12[C@@]([C@]3(C)[C@@]([C@@H](O[C@@H]4O[C@H](CO)[C@@H](O)[C@H](O)[C@H]4O)C1)(C(C)(C)[C@@H](O)CC3)[H])(C[C@@H](O)[C@]5([C@@]2(C)CC[C@@]5([C@@](O[C@@H]6O[C@H](CO)[C@@H](O)[C@H](O)[C@H]6O)(CCC=C(C)C)C)[H])[H])[H]	34 µg/ml ≙ 42.4 µM [96]	ROS stress survival	Induced with 7 mM tert-butylhydroperoxid	Improved	sir2.1, skn-1, daf-16	N2	A	UV-inactivated OP50	NGM agar	Diluted in autoclaved NGM	0.04% DMSO
			Autofluorescence	Microscopy and image processing (GFP filter)	Improved							
Ginsenoside Rg2	C[C@]12[C@@]3(C)[C@@]([C@@]([C@@](CCC=C(C)C)(C)O)(CC3)[H])([C@H](O)C[C@@]1([C@]4(C)[C@@]([C@@H](O[C@H]5[C@H](O[C@H]6[C@H](O)[C@H](O)[C@@H](O)[C@H](C)O6)[C@@H](O)[C@H](O)[C@@H]	41 µg/ml ≙ 52.2 µM [96]	ROS stress survival	Induced with 7 mM tert-butylhydroperoxid	No effect	n.d.	N2	A	UV-inactivated OP50	Solid agar	Diluted in autoclaved NGM	0.04% DMSO

	(CO)O5)C2)(C(C)(C)[C@@H](O)CC4)[H])[H])[H]											
Ginsenoside Re	C[C@]12[C@@]([C@]3(C)[C@@]([C@@H](O[C@H]4[C@H](O[C@H]5[C@H](O)[C@H](O)[C@@H](O)[C@H](C)O5)[C@@H](O)[C@H](O)[C@@H](CO)O4)C1)(C(C)(C)[C@@H](O)CC3)[H])(C[C@@H](O)[C@]6([C@@]2(C)CC[C@@]6([C@@](O[C@@H]7O[C@H](CO)[C@@H](O)[C@H](O)[C@H]7O)(CCC=C(C)C)C)[H])[H])[H]	24.5 µg/ml ≙ 25.9 µM [96]	ROS stress survival Autofluorescence	Induced with 7 mM tert-butylhydroperoxid Microscopy and image processing (GFP filter)	Improved Improved	sir2.1, skn-1, daf-16	N2	A	UV-inactivated OP50	Solid agar	Diluted in autoclaved NGM	0.04% DMSO
Ginsenoside Rb1	C[C@]12[C@@]([C@]3(C)[C@@](CC1)(C(C)(C)[C@@H](O[C@H]4[C@H](O[C@@H]5O[C@H](CO)[C@@H](O)[C@H](O)[C@H]5O)[C@@H](O)[C@H](O)[C@@H](CO)O4)CC3)[H])(C[C@@H](O)[C@]6([C@@]2(C)CC[C@@]6([C@@](O[C@@H]7O[C@H](CO[C@@H]8O[C@H](CO)[C@@H](O)[C@H](O)[C@H]8O)[C@@H](O)[C@H](O)[C@H]7O)(CCC=C(C)C)C)[H])[H])[H]	20 µg/ml ≙ 18.0 µM [96]	ROS stress survival Autofluorescence	Induced with 7 mM tert-butylhydroperoxid Microscopy and image processing (GFP filter)	Improved Improved	sir2.1, skn-1, daf-16	N2	A	UV-inactivated OP50	Solid agar	Diluted in autoclaved NGM	0.04% DMSO
Ginsenoside Rh2	C[C@]12[C@@]3(C)[C@@]([C@@]([C@@](CCC=C(C)C)(C)O)(CC3)[H])([C@H](O)C[C@@]1([C@]4(C)[C@@](CC2)(C(C)(C)[C@@H](O[C@@H]5O[C@H](CO)[C@@H](O)[C@H](O)[C@H]5O)CC4)[H])[H])[H	3 µg/ml ≙ 4.8 µM [96]	ROS stress survival	Induced with 7 mM tert-butylhydroperoxid	No effect	n.d.	N2	A	UV-inactivated OP50	NGM agar	Diluted in autoclaved NGM	0.04% DMSO

	]											
Ginsenoside Rd	C[C@]12[C@@]([C@]3(C)[C@@](CC1)(C(C)(C)[C@@H](O[C@H]4[C@H](O[C@@H]5O[C@H](CO)[C@@H](O)[C@H](O)[C@H]5O)[C@@H](O)[C@H](O)[C@@H](CO)O4)CC3)[H])(C[C@@H](O)[C@]6([C@@]2(C)CC[C@@]6([C@@](O[C@@H]7O[C@H](CO)[C@@H](O)[C@@H](O)[C@H]7O)(CC=C(C)C)C)[H])[H])[H]	2.5 µg/ml ≙ 2.6 µM [96]	ROS stress survival	Induced with 7 mM tert-butylhydroperoxid	No effect	n.d.	N2	A	UV-inactivated OP50	NGM agar	Diluted in autoclaved NGM	0.04% DMSO
Ginsenoside Rc	C[C@]12[C@@]([C@]3(C)[C@@](CC1)(C(C)(C)[C@@H](O[C@H]4[C@H](O[C@@H]5O[C@H](CO)[C@@H](O)[C@H](O)[C@H]5O)[C@@H](O)[C@H](O)[C@@H](CO)O4)CC3)[H])(C[C@@H](O)[C@]6([C@@]2(C)CC[C@@]6([C@@](O[C@@H]7O[C@H](CO[C@@H]8O[C@@H](CO)[C@H](O)[C@H]8O)[C@@H](O)[C@H](O)[C@H]7O)(CCC=C(C)C)C)[H])[H])[H]	2 µg/ml ≙ 1.9 µM [96]	ROS stress survival	Induced with 7 mM tert-butylhydroperoxid	No effect	n.d.	N2	A	UV-inactivated OP50	NGM agar	Diluted in autoclaved NGM	0.04% DMSO
Ginsenoside Rh	C[C@]12[C@@]([C@]3(C)[C@@]([C@@H](O[C@@H]4O[C@H](CO)[C@@H](O)[C@H](O)[C@H]4O)C1)(C(C)(C)[C@@H](O)CC3)[H])(C[C@@H](O)[C@]5([C@@]2(C)CC[C@@]5([C@@](CCC=C(C)C)(C)O)[H])[H])[H]	0.5 µg/ml ≙ 782.6 nM [96]	ROS stress survival	Induced with 7 mM tert-butylhydroperoxid	No effect	n.d.	N2	A	UV-inactivated OP50	NGM agar	Diluted in autoclaved NGM	0.04% DMSO
1-O-[2,3,4-tri-	C[C@@]12[C@]3(	100 µM [97]	ROS stress survival	Induced with 40 mM H_2O_2	Improved	n.d.	N2	L3	OP50	S medium	Diluted in liquid	n.d.

O-Acetyl-α-L-rhamnopyranosyl-(1→2)–4-O-acetyl-α-L-arabinopyranosyl]–21-Deoxytrillenogenin	[H])[C@](O[C@]4(CC[C@H](CO4)C)[C@H]3C)([H])C[C@@]1([H])[C@@]5([H])[C@]([C@@]6(C(C[C@H](C[C@H]6OC7OCC(C(C7OC8OC(C(C(C8OC(C)=O)OC(C)=O)OC(C)=O)C)O)OC(C)=O)O)=CC5)C)([H])CC2		Antioxidative capacity	Measurement of dichlorofluorescein fluorescence after incubation with H_2O_2				L1				
1-O-[2,3,4-tri-O-acetyl-α-L-rhamnopyranosyl-(1→2)–4-O-acetyl-α-L-arabinopyranosyl]–21-O-acetyl-epitrillenogenin	C[C@@]12[C@]3([H])[C@](O[C@]4(CC[C@H](CO4)C)[C@H]3COC(C)=O)([H])C[C@@]1([H])[C@@]5([H])[C@]([C@@]6(C(C[C@H](C[C@H]6OC7OCC(C(C7OC8OC(C(C(C8OC(C)=O)OC(C)=O)OC(C)=O)C)O)OC(C)=O)O)=CC5)C)([H])CC2	100 µM [97]	ROS stress survival	Induced with 40 mM H_2O_2	Improved	n.d.	N2	L3	OP50	S medium	Diluted in liquid	n.d.
			Antioxidative capacity	Measurment of dichlorofluorescein fluorescence after incubation with H_2O_2				L1				
Zingibroside R1	C[C@]12C([C@]3([C@@](C(O)=O)(CC1)CCC(C)(C)C3)[H])=CC[C@]4([C@@]2(C)CC[C@@]5([C@]4(C)CC[C@H](O[C@H]6[C@H](O[C@@H]7O[C@H](CO)[C@@H](O)[C@H](O)[C@H]7O)[C@@H](O)[C@H](O)[C@@H](C(O)=O)O6)C5(C)C)[H])[H]	4 µg/ml ≙ 5 µM [60]	Lifespan	Mean lifespan	Improved	n.d.	N2	L4	OP50	NGM agar	Added to NGM and OP50	0.05%
			Locomotion	Wave initiation rate, activity index, brush stroke and body wave number	Improved							
			Thermal stress survival	Induced with 37°C	Improved							
Bixin	C(=C\C(=C\C=C\C=C(\C=C\C=C(\C=C\C(O)=O)/C)/C)\C)/C=C(\C=C\C(OC)=O)/C	75 µM [98]	Thermal stress survival	Induced with 35°C	No effect	n.d.	N2	L4	UV-inactivated OP50	NGM agar	Added to the solidified NGM	3% EtOH
			ROS stress survival	Induced with 1.4 mM H_2O_2	No effect							
α-Tocopherol	CC1=C(C2=C(CC[C@@](O2)(C)CCC[C@H](C)CCC[C@H](C)CCCC(C)C)C(=C1O)C)C	10 µg/ml ≙ 23.2 µM [99]	Proteotoxicity	Quantification of YFP tagged α-synuclein expression in muscles by microscopy and image processing	Improved	n.d.	NL5901	L1	OP50	NGM agar	Diluted in OP50 stock	n.d.
δ-Tocotrienol	CC1=CC(=CC2=C1O[C@](CC2)(C)CC/C=C(\C)/CC/C=C(\	25 µM [98]	Thermal stress survival	Induced with 35 °C	Improved	n.d.	N2	L4	UV-inactivated OP50	NGM agar	Added to the solidified NGM	3% EtOH
			ROS stress survival	Induced with 1.4 mM H_2O_2	Improved							

	C)/CCC=C(C)C)O											

Table SI 15. Multicomponent mixtures from marine invertebrate sources

Meretrix meretrix	Veneridae; Mollusca	Meat	Ethanol	Crude clam meat extract was desalted by gel filtration chromatography (Sephadex G-10)	Total protein	n.d.	Bioactivity guided isolation led to the identification and synthesis of 25 peptides	0.25, 0.5, 1, 2, 4 mg/mL [85]	ROS stress survival	Induced with 50 mM paraquat	N2	A	NA22	S medium	Diluted in liquid	0% DMSO	Improved	daf-16
				Subfraction of peptide fraction: Low molecular weight peptide fraction (<3 kDa) obtained by ultrafiltration tubes	n.d.	n.d.	Bioactivity guided isolation led to the identification and synthesis of 25 peptides	0.5 and 1, mg/mL [85]	ROS stress survival	Induced with 50 mM paraquat	N2	A	NA22	S medium	Diluted in liquid	0% DMSO	Improved	daf-16
				Subfraction 1 of low molecular weight peptide fraction (<3 kDa) obtained by Sephadex G-25 gel filtration chromatography	n.d.	HPLC-MS^2	Bioactivity guided isolation led to the identification and synthesis of 25 peptides	0.5 and 1, mg/mL [85]	ROS stress survival	Induced with 50 mM paraquat	N2	A	NA22	S medium	Diluted in liquid	0% DMSO	Improved	daf-16
				Subfraction 2 of low molecular weight peptide fraction (<3 kDa) obtained by Sephadex G-25 gel filtration chromatography	n.d.	n.d.	n.d.	0.5 and 1, mg/mL [85]	ROS stress survival	Induced with 50 mM paraquat	N2	A	NA22	S medium	Diluted in liquid	0% DMSO	Improved	n.d.
				Subfraction 3 of low molecular weight peptide fraction (<3 kDa) obtained by Sephadex G-25 gel filtration chromatography	n.d.	n.d.	n.d.	0.5 and 1, mg/mL [85]	ROS stress survival	Induced with 50 mM paraquat	N2	A	NA22	S medium	Diluted in liquid	0% DMSO	No effect	n.d.
				Subfraction 4 of low molecular weight peptide fraction (<3 kDa) obtained by Sephadex G-25 gel filtration chromatography	n.d.	n.d.	n.d.	0.5 and 1, mg/mL [85]	ROS stress survival	Induced with 50 mM paraquat	N2	A	NA22	S medium	Diluted in liquid	0% DMSO	No effect	n.d.
				Subfraction 5 of low molecular weight peptide fraction (<3 kDa)	n.d.	n.d.	n.d.	0.5 and 1, mg/mL [85]	ROS stress survival	Induced with 50 mM paraquat	N2	A	NA22	S medium	Diluted in liquid	0% DMSO	No effect	n.d.

				obtained by Sephadex G-25 gel filtration chromatography														
Holothuria leucospilota	Holothuriidae; Echinodermata	Body wall	Ethanol	Crude extract	Total antioxidants	n.d.	n.d.	10, 100, 500, and 1,000 µg/ml [100]	Lifespan	Mean, median and maximum lifespan	N2	L4	OP50	Solid NGM	n.d.	1% DMSO	Improved	n.d.
												L1					Improved	
			Butanol	Crude extract	Total antioxidants	NMR	The class of triterpene glycosides were tentatively identified with ^{1}H-NMR	10, 100, 500, and 1,000 µg/ml [100]	Lifespan	Mean, median and maximum lifespan	N2	L4	OP50	Solid NGM	n.d.	1% DMSO	Improved	sir-2.1, jnk-1, daf-16, age-1
												L1					Improved	
									Autofluorescence	Filter (360-370/420-460 nm); microscopy and image processing							Improved	
									Thermal stress survival	Induced with 35°C							Improved	
									ROS stress survival	Induced with 250 mM paraquat	N2						Improved	
									UV stress survival	Induced with UV 0.05 J/cm2 for 60 sec							Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence							No effect	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
			Aqueous	Crude extract	Total antioxidants	n.d.	n.d.	10, 100, 500, and 1,000 µg/ml [100]	Lifespan	Mean, median and maximum lifespan	N2	L4	OP50	Solid NGM	n.d.	1% DMSO	No effect	n.d.
												L1					No effect	

Table SI 16. Multicomponent mixtures from fungal sources

Cetraria islandica	Parmeliaceae; Ascomycota	Lichen	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	No effect	n.d.
Fomitopsis pinicola	Fomitopsidaceae, Basidiomycota	Fruit body	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	No effect	n.d.
Piptoporus betulinus		Fruit body	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	No effect	n.d.
Ganoderma lucidum	Ganodermataceae, Basidiomycota	Fruit body	Aqueous	Crude extract	n.d.	n.d.	n.d.	0.75, 3.75, 7.5, 11.25, 15 mg/ml [101]	Lifespan	Median and maximum lifespan	N2	A	OP50	S medium	Diluted in liquid	0% DMSO	Improved	*eat-2, rsks-1, glp-1*
									ROS stress survival	Induced with 100 mM paraquat							Improved	
										Induced with 10 mM $K_2Cr_2O_7$							Improved	
			dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	Improved	n.d.
Gloeophyllum	Gloeophylla	Fruit body	dichlorometh	Lead-like enhanced extract:	n.d.	n.d.	n.d.	25 and 100	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in	1% DMS	No effect	n.d.

odoratum	ceae, Basidiomycota		hane – methanol	Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE				µg/ml [2]							liquid	O		
Inonotus obliquus	Hymenochaetaceae, , Basidiomycota	Sclerotia	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	HPLC-CAD/UV	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	Improved	n.d.
			Aqueous acetone (80%)	Crude extract	n.d.	n.d.	n.d.	50 and 200 µg/mL [102]	Lifespan	Mean lifespan	N2	A	OP50	Solid agar	Mixed with NGM	0% DMSO	Improved	daf-16
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
										HSF1::GFP	OG497						No effect	
Poria cocos	Polyporaceae, Basidiomycota	Fruiting body	Butyl-methyl ether – methanol	Combined crude extracts of (1) butyl-methyl ether (MTBE) - methanol and (2) methanol	n.d.	HPLC-MS	n.d.	30 µg/ml [49]	Thermal stress survival	Induced with 37° C	N2	L4	OP50	Solid NGM agar	added to the NGM agar plates	0.05% DMSO	No effect	n.d.
Lignosus rhinoceros		Fruiting body	Ethanol	Crude extract	Total phenols, total flavonoids, total antioxidants	GC–MS	Several compounds tentatively identified with GC-MS (e.g. Oleic acid, ergosterol, 3,5-Dimethoxybenzoic acid, fatty acids and fatty acid methyl ester)	50, 100 and 200 µg/ml [103]	Lifespan elongation	Mean Lifespan	N2	L1	OP50	S complete	Diluted in liquid	1% DMSO	Improved	daf-16
									Pharyngeal pumping	Pumping rate	N2	L4		Solid agar			Improved	
									Autofluorescence	Fluorescence Channel n.d. Microscopy + Image Processing	BA17	L1		S complete			Improved*	
									ROS stress survival	Induced with 80 µM juglone	N2						Improved	
									Antioxidant capacity	Measurment of intracellular dichlorofluorescein fluorescence	N2						Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
										SKN-1:GFP	LD1						No effect	
			Aque	Crude hot water	Total	n.d.	n.d.	50, 100	Lifespan	Mean Lifespan	N2	L1	OP50	S complete	Dilute	1%	Improve	daf-16

			ous	extract	phenols, total flavonoids, total antioxidants			and 200 µg/ml [103]	elongation						d in liquid	DMSO	d	
									Pharyngeal pumping	Pumping rate	N2	L4		Solid agar			Improved	
									Autofluorescence	Fluorescence Channel n.d. Microscopy + Image Processing	BA17	L1		S complete			Improved*	
									ROS stress survival	Induced with 80 µM juglone	N2						Improved	
									Antioxidant capacity	Measurment of intracellular dichlorofluorescein fluorescence Microscopy + Image Processing	N2						Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
										SKN-1:GFP	LD1						No effect	
Lignosus rhinoceros			Aqueous	Crude cold water extract	Total phenols, total flavonoids, total antioxidants	n.d.	n.d.	(50, 100 and 200 µg/ml) [103]	Lifespan elongation	Mean Lifespan	N2	L1	OP50	S complete	Diluted in liquid	1% DMSO	Improved	daf-16
									Pharyngeal pumping	Pumping rate	N2	L4		Solid agar			Improved	
									Autofluorescence	Fluorescence Channel n.d. Microscopy + Image Processing	BA17	L1		S complete			Improved*	
									ROS stress survival	Induced with 80 µM juglone	N2						Improved	
									Antioxidant capacity	Measurment of intracellular dichlorofluorescein fluorescence Microscopy + Image Processing	N2						Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
										SKN-1:GFP	LD1						No effect	
Auricularia polytricha	Auriculariaceae, Basidiomycota	Fruiting bodies	Ethanol	Crude ethanol extract of degreased (hexane) material	Total phenols, total flavonoids, total antioxidants	TLC and GC-MS	Triacylglycerols, linoleic acid, and ergosterol were tentatively identified with GC-MS and TLC	20 and 40 µg/mL [104]	Lifespan	Mean and maximum lifespan	N2	L4	OP50	Solid agar	n.d.	0.1% DMSO	Improved	n.d.
									Pharyngeal pumping	Pumping rate							Improved	
Grifola	Merip	Fruiting	Aque	Crude extract	Total protein,	n.d.	n.d.	10 and	Lifespan	Median lifespan	N2	L1	OP50	Solid NGM	Adde	0%	Improve	daf-16

frondosa	ilaceae, Basidiomycota	bodies	ous		total polysaccharides, total phenols, total antioxidants			20 µg/mL [105]						agar	d to agar before OP50 were seeded	DMSO	d	
									Thermal stress survival	Induced with 35°C							No effect	

Table SI 17. Multicomponent mixtures from plant sources

Chondrus crispus	Gigartinaceae, Rhodophyceae	Seaweed	Methanol	Crude extract	Total antioxidants	^{1}H 500 MHz NMR	Bioactivity-guided fractionation; several compounds identified by ^{1}H NMR dereplication (Floridoside, isothionic acid, taurine, unsaturated fatty acids, phenylalanine and L-cirtuline)	1 mg/ml [18]	Lifespan	Mean lifespan	N2	L1	OP50	Solid agar	added to the NGM before OP50 were spread	0.05–0.1% MeOH	No effect	n.d.
									ROS stress survival	Induced with 300 µM juglone							Improved	
										Induced with 500 µM juglone							Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence							Improved	
									Antioxidant capacity	Measurement of intracellular dichlorofluorescein fluorescence after juglone treatment							Improved	
				Apolar fraction of the methanolic crude extract (n.d. fractionation)	n.d.	^{1}H 500 MHz NMR	Compound class identified by ^{1}H NMR dereplication (Fatty acids)	100 µg/ml [18]	ROS stress survival	Induced with 300 µM juglone	N2	L1	OP50	Solid agar	added to the NGM before OP50 were spread	0.05–0.1% MeOH	Improved	n.d.
				Subfraction of apolar fraction (n.d. fractionation)	n.d.	^{1}H 500 MHz NMR	Compound class identified by ^{1}H NMR dereplication (unsaturated fatty acids & carotenoids)	n.d. [18]	ROS stress survival	Induced with 300 µM juglone	N2	L1	OP50	Solid agar	added to the NGM before OP50 were spread	0.05–0.1% MeOH	Improved	n.d.
				Subfraction of apolar fraction (n.d. fractionation)	n.d.	^{1}H 500 MHz NMR	Compound class identified by ^{1}H NMR dereplication (chlorophyll)	n.d. [18]	ROS stress survival	Induced with 300 µM juglone	N2	L1	OP50	Solid agar	added to the NGM before OP50 were spread	0.05–0.1% MeOH	Improved	n.d.
				Subfraction of apolar fraction (n.d. fractionation)	n.d.	^{1}H 500 MHz NMR	Compound class identified by ^{1}H NMR dereplication (lutein or carotenoids)	n.d. [18]	ROS stress survival	Induced with 300 µM juglone	N2	L1	OP50	Solid agar	added to the NGM before OP50 were spread	0.05–0.1% MeOH	Improved	n.d.
				Subfraction of apolar fraction (n.d. fractionation)	n.d.	^{1}H 500 MHz NMR	Compound class identified by ^{1}H NMR dereplication (monogalactosyldiacylglycerols)	n.d. [18]	ROS stress survival	Induced with 300 µM juglone	N2	L1	OP50	Solid agar	added to the NGM before OP50 were spread	0.05–0.1% MeOH	Improved	n.d.
				Subfraction of apolar fraction (n.d. fractionation)	n.d.	^{1}H 500 MHz NMR	Compound class identified by ^{1}H NMR dereplication (glycolipids)	n.d. [18]	ROS stress survival	Induced with 300 µM juglone	N2	L1	OP50	Solid agar	added to the NGM before OP50 were spread	0.05–0.1% MeOH	No effect	n.d.
			Water	Crude extract	n.d.	^{1}H 500 MHz	Two compounds identified	1 mg/ml	ROS stress	Induced with 300	N2	L1	OP50	Solid agar	added	0.%	No effect	n.d.

						NMR	by ^{1}H NMR dereplication (floridoside and isothionic acid)	[18]	survival	µM juglone					to the NGM before OP50 were spread	MeOH		
Drynaria fortunei	Polypodiaceae	Roots	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	No effect	n.d.
Ginkgo biloba	Ginkgoaceae	Leaves	standardised extract EGb 761					100 µg/ml [106]	ROS stress survival	Induced with 160 µM juglone	CL2070	L1	OP50	Solid agar	mixed with OP50	0.01% DMSO	Improved	n.d.
								100 µg/ml [107]	Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	CL4176	L1	OP50	Solid agar	Supplemented to NGM plates	5% DMSO	Improved	n.d.
								1 mg/ml [18]	ROS stress survival	Induced with 300 µM juglone	N2	L1	OP50	Solid agar	added to the NGM before OP50 were spread	0.05–0.1% MeOH	Improved	n.d.
										Induced with 500 µM juglone								n.d.
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence								n.d.
		Seeds	Aqueous	Crude extract	n.d.	HPLC-MS^2	Several compounds were tentatively identified with HPLC-MS^2	0, 5, 10, 20, or 40 mg/mL [108]	Lifespan	mean lifespan	N2	L4	OP50	Solid agar	n.d.	0% DMSO	Improved	*daf-2* and *daf-16*
									Locomotion	Head swing frequency and Body bending frequency							Improved	
									Pharyngeal pumping	Pumping rate							Improved	
									Autofluorescence	Filter (488/620 nm); microscopy and image processing							No effect	
									Thermal stress survival	Induced with 35°C							Improved	
									ROS stress survival	Induced with 400 µM juglone							Improved	
									ROS levels	Measurement of dichlorofluorescein fluorescence with microscopy and image processing		L1					No effect	
									Nuclear translocation	DAF-16::GFP	TJ356	n.d.					Improved	
									Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	CL4176	n.d.					Improved	
Platycladus orientalis	Cupressaceae	Semen	Petrol ether	Butanol fraction obtained as followed: crude dried petrolether extract was refluxed with ethanol and the ethanol extract dried. Then the ethanol	n.d.	n.d.	n.d.	500 µg/mL [5]	Lifespan	Mean lifespan	N2	L4	OP50	Solid agar	diluted into OP50 and spread to plates	n.d.	Improved	n.d.
									Autofluorescence	Microscopy + image processing (n.d. filter)							Improved	
									Thermal stress survival	Induced with 37 °C							Improved	
									ROS stress survival	Induced with 500 µM juglone							Improved	

				suspended in water and sequentially subjected to partitioning with the same volume of ethyl acetate and n-butanol)					ROS levels	Measurment of intracellular dichlorofluorescein fluorescence							Improved	
Chamaecyparis obtusa var. formosana		Leaves	Aqueous	Crude extract	Total phenols, total antioxidants	n.d.	Bioactivity-guided fractionation	2 µg/mL [8]	ROS stress survival	Induced with 250 µM juglone	N2	L1	OP50	S medium	Diluted in liquid	0.1% DMSO	Improved	n.d.
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence							Improved	
				Ethylacetat fraction of crude extract obtained by successive liquid-liquid seperation	Total phenols, total antioxidants	HPLC-MS, NMR	Bioactivity-guided fractionation led to the isolation of six compounds by semipreparative high-performance liquid chromatography (catechin, quercetin, quercetin-3-O-α-rhamnopyranoside, myricetin-3-O-α-rhamnopyranoside, vanillic acid and 4-hydroxybenzoic acid), characterized by NMR and MS	2 and 20 µg/ml [8]	Lifespan	Mean and maximum lifespan	N2	L1	OP50	S medium	Diluted in liquid	0.1% DMSO	Improved	n.d.
									Autofluorescence	DAPI filter (340–380/435–485 nm) microscopy and image processing							Improved	
									ROS stress survival	Induced with 250 µM juglone							Improved	
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence							Improved	
				Butanol fraction of crude extract obtained by successive liquid-liquid seperation	Total phenols, total antioxidants	n.d.	n.d.	2 µg/mL [8]	ROS stress survival	Induced with 250 µM juglone	N2	L1	OP50	S medium	Diluted in liquid	0.1% DMSO	Improved	n.d.
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence							Improved	
				Water fraction of crude extract obtained by successive liquid-liquid seperation	Total phenols, total antioxidants	n.d.	n.d.	2 µg/mL [8]	ROS stress survival	Induced with 250 µM juglone	N2	L1	OP50	S medium	Diluted in liquid	0.1% DMSO	No effect	n.d.
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence							No effect	
Juniperus communis		Fruits (berry cones)	Essential oil		Total phenols, total antioxidants, total flavonoids	GC–MS	Several compounds were identified with GC-MS (e.g. α-pinene, limonene)	0, 10, 50 and 100 ppm [109]	Lifpespan	Mean and maximum lifespan	N2	L1	OP50	NGM agar	n.d.	n.d.	Improved	*daf-16, skn-1, hsf-1*
									Pharyngeal pumping	Pumping rate							Improved	
									Autofluorescence	Filter (340–380/ 435–485) microscopy and image processing							Improved	
									thermal stress survival	Induced with 37 °C							Improved	
									ROS stress survival	Induced with 250 µM juglone							Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence with spectrophotometer							Improved	
Nymphaea × hybrida	Nymphaeaceae	Roots	Aqueous	Crude extract	n.d.	n.d.	n.d.	0.2, 1 and 5 mg/ml [110]	Lifespan	Mean lifespan	N2	L4	OP50	Solid agar	n.d.	0% DMSO	Improved	daf-16
			Hydroethanolic (70%)	Fraction obtained after SPE with HPD-400 macroporous adsorption resin and elution with 60% ethanol	n.d.	n.d.	n.d.	100 µg/mL [110]	Lifespan	Mean lifespan	N2	L4	Heat inactivated OP50 OP50 OP50	Solid agar	n.d.	0% DMSO	Improved	daf-16
									Locomotion	Number of body bends							Improved	
									Thermal stress resistance	Induced with 35°C							Improved	
									ROS stress survival	Induced with 0.1 mg/ml paraquat							Improved	

									Lifespan	Mean lifespan							Improved	
									Thermal stress resistance	Induced with 35°C							Improved	
Nymphaea tetragona		Flowers	Hydroethanolic (80%)	Crude extract	Total phenols, total flavonoids, total terpenes, total antioxidants	n.d.	n.d.	50 mg/mL [24]	ROS stress survival	Induced with 0.1 mg/ml paraquat	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	Improved	n.d.
									Lifespan	Mean and Median Lifespan							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
Nelumbo nucifera	Nelumbonaceae	Flowers	Hydroethanolic (80%)	Crude extract	Total phenols, total flavonoids, total terpenes, total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	Improved	n.d.
Schisandra chinensis	Schisandraceae	Fruits	Butyl-methyl ether – methanol	Combined crude extracts of (1) butyl-methyl ether (MTBE) - methanol and (2) methanol	n.d.	HPLC-MS	n.d.	30 µg/ml [49]	Thermal stress survival	Induced with 37◦C	N2	L4	OP50	Solid NGM agar	added to the NGM agar plates	0.05% DMSO	Improved	n.d.
Michelia alba	Magnoliaceae	Flowers (petals)	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and median lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	No effect	n.d.
Lindera obtusiloba	Lauraceae	Branches	Methanol	Crude extract	n.d.	n.d.	n.d.	125, 250 and 500 µg/mL [111]	Lifespan	Mean and maximum lifespan	N2	L1	OP50	Solid agar	inserted into autoclaved NGM	n.d.	Improved	n.d.
									Locomotion	Movement speed							No effect	
									Pharyngeal pumping	Pumping rate							Detrimental	
									Thermal stress survival	Induced with 36°C							Improved	
									ROS stress survival	Induced 60 mM paraquat							Improved	
									Hypertonic stress survival	Induced with 500 mM NaCl							Improved	
Dioscorea alata	Dioscoreaceae	Tuber	Hydromethanolic	Crude extract	Total phenols, total tannins, total antioxidants	GC–MS	Several compounds tentatively identified with GC-MS including fatty acid methyl esters	100, 200, 300, 400, 500 µg/mL [112]	Lifespan	Mean lifespan	N2	L1	OP50	Solid agar	Contained in OP50	0.5% EtOH	Improved	hsf-1, skn-1
									thermal stress survival	Induced with 35 °C							Improved	
									ROS stress survival	Induced with 500 µM juglone							Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence with plate reader							Improved	
									Nuclear translocation	HSF-1::GFP	CF1824						No effect	
										SKN-1:GFP	LD1						Improved	
									Proteotoxicity	YFP tagged α-synuclein expression in muscles, Microscopy	NL5901						Improved	
Alpinia zerumbet	Zingiberaceae	Leaves	Aqueous	Crude extract	Total phenols	n.d.	n.d.	62.5, 125, and 250 µg/mL [53]	ROS stress survival	Induced with 0.5mM H_2O_2	N2	L1	OP50	Solid agar	Diluted in liquid agar before pouring to plates	0% DMSO	Improved	sod-3 and the hsp-16.2
									Thermal stress survival	Induced with 35 ◦C							Improved	
			Hydroethanolic	Aequeous fraction after liquid-liquid seperation with	Total phenols	n.d.	n.d.	25, 50 and 100 µg/ml [53]	Lifespan elongation	Mean lifespan	N2	L1	OP50	Solid agar	Diluted in liquid	0% DMSO	Improved	sod-3 and the hsp-16.2

				hexane and ethylacetate				2.5, 5, and 10 µg/mL [53]	ROS stress survival	Induced with 0.5mM H_2O_2					agar before pourin g to plates		Improved	
									Thermal stress survival	Induced with 35 ◦C							Improved	
Imperata cylindrica	Poace ae	Rhizomes	dichlor ometh ane – metha nol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Dilute d in liquid	1% DMSO	No effect	n.d.
Triticum aestivum		Seeds	Metha nol/Hcl (85:15, v:v)	Crude extract	Total anthocyanins	HPLC-UV	Several constituents identified and quantified with RP-HPLC-UV and anthocyanin standards (cyanidin-3-O glucoside 11 peonidin-3O glucoside 12 malvidin-3O galactoside)	10, 50 100 µg/mL [113]	Lifespan elongation	Mean life span	N2	A	OP50	Solid agar	Extract s in E. coli	0% DMSO	Improved	DAF-16
									ROS levels	Measurement of intracellular dichlorofluorescei n fluorescence with plate reader		L1					Improved	
									Nuclear translocation	DAF-16::GFP	TJ356	L2		S Medium			Improved	
Euterpe precatoria	Arecac eae	Fruits	Aqueo us	Crude extract	Total anthocyanins, total antioxidants	HPLC-MS^2	Cyanidin 3-O-glucoside and cyanidin 3-O-rutinoside were quantified by HPLC-MS^2	100 mg/ml [114]	Lifespan	n.d.	BA17	L1	OP50	Solid agar	mixed with OP50 before spread ing to NGM	0% DMSO	No effect	daf-16, osr-1, unc-43
									Thermal stress survival	Induced with 35°C	N2						No effect	
									ROS stress survival	Induced with 7.5 mM tert-butyl hydrogen peroxide							Improved	
													Dead OP50				Improved	
									Hypertonic stress survival	Induced with 500 mM NaCl			OP50				Improved	
									Antioxidant capacity	Measurement of dichlorofluorescei n fluorescence after treatment with H_2O_2							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
									Proteotoxicity	YFP tagged polyglutamine in muscles; microscopy and image Processing	OG412						Improved	
			Hydro metha nolic (80%)	Crude extract	Total phenols, total antioxidants, Total anthocyanins	HPLC-UV/VIS	cyanidin-3-rutinoside was quantified using HPLC-UV/VIS	50, 100, 200 and 300 µg/mL [115]	Lifespan elongation	Mean life span	N2	A	OP50	S Medium	Dilute d in liquid	0% DMSO	No effect	DAF-16
									Pharyngeal pumping	Pumping rate				Solid agar	Supple mente d to bacteri al lawn		Improved	
									ROS stress survival	Induced with 80 µM juglone		L1		S medium	Dilute d in liquid		Improved	
									ROS levels	Measurment of intracellular dichlorofluorescei n fluorescence Microscopy + Image Processing							Improved	
									Autofluorescen ce	Filter (360/460 nm); microscopy and image processing		A					Improved	
									Nuclear translocation	DAF-16::GFP	TJ356	L1					Improved	
Landoltia punctata		Thallus	Hydro metha nolic (70%)	Crude extract	Total antioxidants	HPLC-MS^2, NMR	Bioactivity-guided fractionation led to the isolation of 5 compounds (apigenin 6-C-[β-D-apiofuranosyl-(1 → 2)]β-D-glucopyranosided,	2 and 20 µg/ml [58]	Thermal stress survival	Induced with 37 °C	N2	L1	UV inactivat ed W3110	S medium	Dilute d in liquid	1% DMSO	Improved	n.d.
									ROS stress survival	Induced with 250 µM juglone							Improved	
									ROS levels	Measurement of							Improved	

							quercetin 3-O-β-D-apiofuranoside (3), luteolin 6-C-[β-D-apiofuranosyl-(1 → 2)]-β-D-glucopyranoside (2), apigenin 6C-β-D-glucopyranoside and luteolin 7-O-neohespirodise) 24 flavone glycosides were tentatively identified LC-MS^2			intracellular dichlorofluorescein fluorescence								
Dendrobium candidum	Orchidaceae	Flowers	Hydroethanolic (80%)	Crude extract	Total phenols, total flavonoids, total terpenes, total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	Improved	n.d.
Crocus sativus	Iridaceae	Flowers	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and median lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	No effect	n.d.
Allium cepa	Amaryllidaceae	Bulbus	Hydroethanolic	Crude extract of fermented juice (which was lyophilized and degreased with (hexane))	Total phenols, total flavonoids, total antioxidants	HPLC-MS^2	26 compounds tentatively identified with HPLC-MS^2 (quercetin, homovanillic acid, N-malayamycin, phenprobamate, p-coumaric acid, allopurinol, 4-hydroxyacetophenone, protocatechuic acid, seriniquinone, isorhamnetin, hydroquinone, echinopsine, cinnamic acid, camptothecin, protirelin, picrocrocin, nifurmazole, gallic acid, 6-gingerol, camalexin, asimadoline, anthranilic acid, engeletin, catechin, caffeic acid 3-O-glucuronide)	n.d. [50]	Lifespan	n.d.	N2	L4	OP50	Solid agar supplemented with 10–15 mM glucoes	Seeded with NGM to plates	n.d. concentration of DMSO	Improved	n.d.
			Hydroethanolic	Crude extract of juice (which was lyophilized and degreased with (hexane))	Total phenols, total flavonoids, total antioxidants	HPLC-MS^2	26 compounds tentatively identified with HPLC-MS^2 (quercetin, homovanillic acid, N-malayamycin, phenprobamate, p-coumaric acid, allopurinol, 4-hydroxyacetophenone, protocatechuic acid, seriniquinone, isorhamnetin, hydroquinone, echinopsine, cinnamic acid, camptothecin, protirelin, picrocrocin, nifurmazole, gallic acid, 6-gingerol, camalexin, asimadoline, anthranilic acid, engeletin, catechin, caffeic acid 3-O-glucuronide)	n.d. [50]	Lifespan	n.d.	N2	L4	OP50	Solid agar supplemented with 10–15 mM glucoes	Seeded with NGM to plates	n.d. concentration of DMSO	No effect	n.d.
Hemerocallis citrina	Liliaceae	Flowers	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of	n.d.	No effect	n.d.

															the NGM			
Lilium brownii var. viridulum		Flowers (petals)	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	No effect	n.d.
Epimedium sagittatum	Berberidaceae	n.d.	Hydroethanolic (75%)	Flavonoid fraction obtained by SPE with macroporous resin (D101), washing with water and elution with 70% ethanol	n.d.	n.d.	n.d.	100, 50, and 25 mg/L [116]	Lifespan	Median lifespan	N2	L4	OP50	Solid agar	added to the NGM	1% DMSO	Improved	daf-16
									Locomotion	Number of body bends							Improved	
									Thermal stress survival	Induced with 35 °C							Improved	
									ROS stress survival	Induced with 16 mM H_2O_2							Improved	
									Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	CL4176	L3					Improved	
										Paralysis assay with constitutive age -dependent YFP::polyglutamine aggregation in muscles	AM140	L4					Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
Trollius chinensis	Ranunculaceae	Flowers	Hydroethanolic (80%)	Crude extract	Total phenols, total flavonoids, total terpenes, total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	Improved	n.d.
Paeonia suffruticosa		Flowers (petals)	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	No effect	n.d.
Rhodiola sp.	Crassulaceae	Rhizomes	Aqueous acetone (80%)	Crude extract	Total phenols, total flavonoids	HPLC-UV	Several constituents were tentatively identified by HPLC-UV (e.g. gallic acid, epigallocatechin, catechin, chlorogenic acid, caffeic acid, epigallocatechin gallate)	240, 320 and 480 µg/mL [117]	Lifespan	Mean and median lifespan	N2	L4	OP50	Solid agar	Diluted in OP50	n.d.	Improved	daf-16, skn-1
									Pharyngeal pumping	Pumping rate							Improved	
									Locomotion	Motility classes							Improved	
									Autofluorescence	Microscopy + image processing (n.d. filter)							Improved	
									thermal stress survival	Induced with 35 °C							Improved	
									UV stress survival	Induced with UV-B 1200 J/m^2							Improved	
									ROS stress survival	Induced with 125 mM paraquart							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
										SKN-1:GFP	LG340						Improved	
Graptopetalum paraguayense		Leaves	Ethanol	Fraction obtained by Sephadex LH-20 gel filtration chromatography of crude extract	n.d.	n.d.	n.d.	20 and 40 µg/mL [118]	Lifespan	n.d.	N2	n.d.	UV-inactivated OP50	Solid NGM agar	n.d.	n.d.	Improved	n.d.
									Locomotion	Number of body bends	AM140	L4					Improved	
											N2	n.d.					Improved	
									Autophagy	GFP::LGG-1 marked autophagic vesicles were	DA2123	L1					Improved	

										counted in seam cells								
Penthorum chinense	Penthoraceae	n.d.	hydroethanolic	Flavonoid enriched fraction (generated with DM130 macroporous resins column)	Total phenols, total flavonoid, total antioxidants	HPLC-MS	Several compounds tentatively identified using HPLC-MS (e.g quercetin-3-O-xyloside, quercetin-3-O-rhamnoside, kaempferol, kaempferol-3-O-rhamnoside, quercetin, pinocembrin-7-O-glucoside, pinocembrin dihydrochalcone-7-O-[4″, 6″- HHDP]-glucoside, pinocembrin dihydrochalcone -7-O-[3″-O-galloyl-4″, 6″-HHDP]-glucoside, thonningianins A)	0.1 mg/mL [119]	thermal stress survival	Induced with 35 °C	N2	L4	OP0	Solid agar	n.d.	0.05% DMSO	Improved	n.d.
Ribes fasciculatum	Grossulariaceae	Stems and twigs	Methanol	Ethyl acetate fraction prepared as followed: Crude extract was suspended with distilled water, extracted three times with hexane, dichloromethane and ethyl acetate	n.d.	n.d.	n.d.	125, 250, and 500 µg/mL [120]	Lifespan	Mean and maximum lifespan	N2	L1	OP50	Solid agar	inserted into autoclaved NGM	0.1% DMSO	Improved	*daf-2*, *age-1*, *sir-2.1*, and *daf-16*
									Pharyngeal pumping	Pumping rate							Detrimental	
									Autofluorescence	Microscopy and image processing (n.d. filter)							Improved	
									Thermal stress survival	Induced with 36°C							Improved	
									ROS stress survival	Induced 60 mM paraquat							Improved	
									Hypertonic stress survival	Induced with 500 mM NaCl							Improved	
									Antioxidant capacity	Measurement of intracellular dichlorofluorescein fluorescence after treatment with juglone							Improved	
Vitis vinifera	Vitaceae	Fruit pomace	Methanol	Fraction generated as followed: Hydromethanolic crude extract dried and separated between water and hexane; RP-SPE was performed with aqueous phase, the MeOH eluent was used	Total antioxidants	HPLC-DAD-MS	Several constituents identified and quantified with RP-HPLC-UV and standards (e.g. catechin, epicatechine gallate, procyanidin B1-B4, procyanidin B2 3-O-gallate, quercetin-3-O glycosides)	100 and 300 µg/mL [51]	Thermal stress survival	Induced with 35 °C	N2	L1	heat-inactivated OP50	Solid agar	Diluted in agar	0.1% DMSO	Improved	n.d.
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence							Improved	
Glycyrrhiza glabra	Fabaceae	Roots	Ethanol	Crude extract (Soxhlet)	Total antioxidants	HPLC-UV	1.18% glycyrrhizinic acid content was quantified with HPLC-UV	25, 50, 100, 250 and 500 µg/mL [121]	Lifespan	Mean lifespan	SS104	A	OP50	Solid agar	n.d.	n.d.	Improved	n.d.
									ROS stress survival	Induced with 150 mM juglone	N2	L1					Improved	
Glycyrrhiza uralensis		Roots	Hydroethanolic (70%)	Crude extract	n.d.	HPLC-UV	HPLC-UV quantification of 4 standards (liquiritin, liquiritigenin, isoliquiritigenin, glycyrrhizic acid)	1 mg/ml [44]	Lifespan	T_{50}	NL5901	Adult	OP50	Solid NGM agar	n.d.	4% DMSO	Improved	
									Proteotoxicity	YFP tagged α-synuclein expression in muscles, Microscopy							No effect	
Glycyrrhiza sp.		Roots	Aqueous	Crude extract (decoct)	n.d.	HPLC-UV	Liquiritin, isoliquiritin and glycyrrhizinic acid were identified with RP-HPLC-UV and comparison to standards	120 – 240 mg/ml [122]	Lifespan elongation	Mean lifespan	N2	L1	OP50	M9	Diluted in liquid	0% DMSO	Improved	daf-2, pdk-1, daf-18, daf-16, age-1, sgk-1, and akt-1
									Motility	Number of head thrashes + body bends							Improved	
									Autofluorescence	525 nm bandpass filter; microscopy + image processing							Improved	
									thermal stress survival	Induced with 35 °C							Improved	

									ROS stress survival	Induced with 2 mM paraquart							Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence; microscopy + image Processing							No effect	
									Antioxidant capacity	Measurement of dichlorofluorescein fluorescence after incubation with 2 mM paraquart; microscopy + Image Processing							Improved	
Astragalus membranaceus		Roots	Butyl-methyl ether – methanol	Combined crude extracts of (1) butyl-methyl ether (MTBE) - methanol and (2) methanol	n.d.	HPLC-MS	n.d.	30 µg/ml [49]	Thermal stress survival	Induced with 37° C	N2	L4	OP50	Solid NGM agar	added to the NGM agar plates	0.05% DMSO	Improved	n.d.
Vigna radiata		Seeds	Hydroethanolic (70%)	Fraction obtained after SPE with Amberlyst AB-8 resin and elution with 50% EtOH	n.d.	HPLC-MS	4 compounds were identified and quantified (vitexin, isovitexin, orientin, isoorientin)	50, 100, 200, and 300 µg/mL [57]	Lifespan	Mean Lifespan	N2	L4	Heat-inactivated OP50	S Medium	Diluted in liquid	0.6% DMSO	Improved	Daf-15, sir-2.1, aak-2, let-363
									Locomotion	Number of body bends							Improved	
									Pharyngeal pumping	Pumping rate							Improved	
									Autofluorescence	Filter (485/ 535) microscopy and image processing							Improved	
									Thermal stress survival	Induced with 37° C							Improved	
									ROS stress survival	Induced with 1 mM H_2O_2							Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
Senna singueana		Bark	Methanol	Crude methanolic extract of degrased bark	Total antioxidants, total phenols	HPLC-MS^2	36 compounds tentatively identified by HPLC-MS^2 (e.g. cassiaflavan-(epi)gallocatechin, cassiaflavan-(epi)catechin, catechin, guibourtinidol-(epi)gallocatechin, protocatechuic acid)	100 and 200 µg/mL [123]	ROS stress survival	Induced with 80 µM juglone	N2	L1	OP50	S medium	Diluted in liquid	n.d.	Improved	daf-16
									Antioxidant capacity	Measurement of dichlorofluorescein fluorescence without or after treatment with juglone							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
Cassia abbreviata		Bark	Methanol	Crude methanolic extract of degreased bark	n.d.	HPLC-MS^2	36 compounds tentatively identified by HPLC-MS^2 (proanthocyanidins, gallocatechin, catechin, guibourtinidol, cassiaflavan, and afzelechin)	100 and 200 µg/mL [124]	ROS stress survival	Induced with 80 µM juglone	N2	L1	OP50	S medium	Diluted in liquid	n.d.	Improved	daf-16
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence after treatment with 20 µM juglone Microscopy + Image Processing							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
		Roots	Methanol	Crude extract	Total phenols, Total antioxidants	HPLC-MS/MS	HPLC-MS^2 dereplication of 57 constituents (e.g. (epi)Catechin, (epi)-afzelechin, (epi)-guibourtinidol, and (ent)-cassiaflavan monomers as well as their dimers, trimers, and their	100- 200 µg/mL [124]	ROS stress survival	Induced with 80 µM juglone	N2	L1	OP50	S Medium	Diluted in liquid	0% DMSO	Improved	daf-16
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence; microscopy + Image Processing							Improved	

							diastereomers)		Nuclear translocation	DAF-16::GFP	TJ356						Improved	
Glycine max		Semen	Aqueous	Low molecular weight fraction of Bacillus subtilis natto T9303 fermented soy. The fraction was obtained by dialysis and C18 SPE	n.d.	n.d.	n.d.	0.5 and 1 mg/mL [125]	Lifespan	Mean lifespan	N2	A	OP50	Solid agar	n.d.	0% DMSO	Improved	n.d.
									Autofluorescence	Filter (385/ 420) microscopy and image processing		L4		S medium	Diluted in liquid		Improved	
									Thermal stress survival	Induced with 35°C							Improved	
									ROS stress survival	Induced with 60 mM paraquat							Improved	
Caesalpinia sappan		Wood	Methanol	Crude extract	n.d.	HPLC-MS, NMR, TLC	Bioactivity-guided fractionation	500 µg/mL [56]	Lifespan	Mean lifespan	N2	L1	OP50	Solid agar	poured into autoclaved NGM	0.1% DMSO	No effect	
				Dichloromethane fraction obtained by sequential liquid-liquid partition of crude methanolic extract	n.d.	n.d.	n.d.	500 µg/mL [56]	Lifespan	Mean lifespan	N2	L1	OP50	Solid agar	poured into autoclaved NGM	0.1% DMSO	No effect	
				Ethylacetate fraction obtained by sequential liquid-liquid partition of crude methanolic extract	n.d.	HPLC-MS, NMR, TLC	Bioactivity-guided fractionation led to the isolation of brazilin by NP-LC, Sephadex LH20 and JAI-GS310 columns, characterized by NMR and MS	500 µg/mL [56]	Lifespan	Mean lifespan	N2	L1	OP50	Solid agar	poured into autoclaved NGM	0.1% DMSO	Improved	
				Butanol fraction obtained by sequential liquid-liquid partition of crude methanolic extract	n.d.	n.d.	n.d.	500 µg/mL [56]	Lifespan	Mean lifespan	N2	L1	OP50	Solid agar	poured into autoclaved NGM	0.1% DMSO	No effect	
Caesalpinia mimosoides		Leaves and twigs	Methanol	Crude Soxhlet extract	Total phenols, total flavonoid, total antioxidants	HPLC-MS	11 compounds tentatively identified using HPLC-MS (e.g. 3-O-methylgallate, 4-aminomethylindole, emmotin A, theogallin and gallic acid)	25, 50 and 100 µg/mL [126]	Lifespan	Mean lifespan	N2	L4	OP50	Solid agar	Extract supplemented to OP50	1% DMSO	Improved	daf-16
									Autofluorescence	microscopy + Image processing (n.d. filter)	BA17	L1		S-medium	Diluted in liquid		Improved	
									ROS stress survival	Induced with 80 µM juglone	N2						Improved	
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence; microscopy + Image Processing							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
										SKN-1:GFP	LD1						No effect	
Styphnolobium japonicum		Fruits	Hydromethanolic (70%)	Crude extract	Total phenols, total antioxidants	HPLC-MS	24 compounds tentatively identified using HPLC-MS (e.g. glycosides of apigenin, kaempferol, galloyl – hexahydroxydiphenic acid and quercetin)	100, 200, and 300 µg/mL [38]	ROS stress survival	Induced with 80 µM juglone	N2	L1	OP50	Solid agar	n.d.	2.1% MeOH	Improved	n.d.
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence; microscopy + image processing							Improved	
Dipteryx alata		Fruits	Aqueous	Fruit pulp homogenate	Total phenols, total antioxidants, total ascorbic acid content	HPLC-MS	23 compounds tentatively identified using HPLC-MS (e.g. protocatechuic acid, citric acid, vicenin-2, luteolin)	500 and 1000 µg/mL [127]	Lifespan		N2	A	OP50 inactivated with kanamycin	Solid agar	added to the NGM	0% DMSO	Improved	daf-16
									thermal stress survival	Induced with 37°C		n.d.					Not improved	
									ROS stress survival	Induced with n.d. concentration of juglone		L1					Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
Mucuna		Seeds	Metha	Ethyl acetate fraction	n.d.	HPLC-MS[2]	Levodopa was quantified	20 and 40	Neurotoxicity	Survival during 1-	N2	L1	OP50	S medium	Dilute	0%	Improved	

pruriens			nol	obtained after sequential partition of crude extract between water, n-hexanes and ethyl acetate			with HPLC-MS^2 (0.02%)	µg/mL [128]		methyl-4-phenylpyridinium treatment					d in liquid	DMSO		
Apios americana		Leaves	Hydroethanolic (70%)	Fraction obtain after LC with AB-8 macroporous resin	n.d.	HPLC-MS	Three compounds were identified and quantified with HPLC-MS and standards (schaftoside, orientin, vitexin)	100 µg/mL [129]	Lifespan	Mean lifespan	N2	A	OP50	Solid agar	n.d.	n.d.	Improved	daf-16, skn-1, pmk-1
														Solid agar supplemented with 50 mM glucose			Improved	
									ROS stress survival	Induced with 1 mM paraquat				Solid agar supplemented with 50 mM glucose			Improved	
Aspalathus linearis		Leaves and fine stem	Aequeous	Crude extract (Green rooibos)	n.d.	HPLC-UV	Several constituents identified and quantified with RP-HPLC-UV and standards (aspalathin, nothofagin, enolic phenylpyruvic acid-2-O-glucoside, orientin, isoorientin, vitexin, isovitexin, hyperoside, isoquercitrin, rutin, quercetin-3-O-robinobioside, luteolin-7-O-glucoside)	100 µg/mL [130]	Lifespan	Mean life span	N2	A	OP50	Solid agar	Extracts in E. coli	n.d.	No effect	daf-16, sod-3
										Mean life span under high glucose (50 mM) conditions							Improved	
									ROS stress survival	Induced with 400 µM juglone		L1					Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence with plate reader							Improved	
				Crude extract (Red rooibos)	n.d.	HPLC-UV/VIS	Several constituents identified and quantified with RP-HPLC-UV and standards (aspalathin, nothofagin, enolic phenylpyruvic acid-2-O-glucoside, orientin, isoorientin, vitexin, isovitexin, hyperoside, isoquercitrin, rutin, quercetin-3-O-robinobioside, luteolin-7-O-glucoside, ferulic acid)	100 µg/mL [130]	Lifespan	Mean life span	N2	A	OP50	Solid agar	Extracts in E. coli	n.d.	No effect	daf-16, sod-3
										Mean life span under high glucose (50 mM) conditions							Improved	
									ROS stress survival	Induced with 400 µM juglone		L1					No effect	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence with plate reader							Improved	
Sophora japonica		Flowers (petals)	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	No effect	n.d.
Lablab purpureus		Flowers (petals)	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	No effect	n.d.
Polygala sp.	Polygalaceae	Roots	Hydroethanolic (75%)	Fraction obtained as followed: Dried crude extract was solved in MeOH and then separated with RP-18 LC and a gradient of 50 – 100% MeOH. The tested fraction was the eluent with 70-80% MeOH	n.d.	HPLC- MS^2	17 saponins were identified and quantified using HPLC-MS^2 (e.g. senegasaponins, onjisaponins, polygalasaponins)	100 and 250 µg/mL [131]	Lifespan		N2	L4	heat-treated OP50	Solid agar	Dissolved in S Medium with OP50	0% DMSO	Improved	n.d.
									Locomotion	Number of body bends							Improved	
									Pharyngeal pumping	Pumping rate							Improved	
										Pharynx pump structure classes							Improved	
									Autofluorescence	GFP filter; microscopy + image processing							Improved	
									Antioxidant capacity	Measurement of intracellular dichlorofluorescein fluorescence after H_2O_2 treatment;		L1	OP50				Improved	

										microscopy and image processing								
Betula utilis	Betulaceae	Bark	Ethanol	Crude extract	n.d.	GC-MS	Several compounds tentatively identified using GC-MS (betulin, lanost-8en-26-oic acid, lupenone, lupeol, oleanolic acid, betulinic acid)	10, 50 and 100 µg/ml	Lifespan	Mean lifespan	N2	L4	OP50	Solid agar	Spotted onto OP50	0.01% EtOH	Improved	hsf-1, skn-1, daf-16
									Pharyngeal pumping	Pumping rate		L1					Improved	
									Thermal stress survival	Induced with 37°C		A					Improved	
									Autofluorescence	DAPI filter (340–380 nm/435–485 nm) microscopy + image processing							Improved	
									ROS stress survival	Induced with 250 µM juglone							Improved	
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence		L1					Improved	
									Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	CL4176	L4					Improved	
										YFP tagged α-synuclein expression in muscles, Microscopy	NL5901	A					Improved	
									Nuclear translocation	DAF-16::GFP	TJ356	L4					Improved	
Momordica charantia	Cucurbitaceae	n.d.	hydroethanolic (80%)	Crude extract	n.d.	HPLC-UV-MS	14 compounds tentatively identified using HPLC-MS (e.g. momordicosides, goyaglycosides, momordicinenes, charantadiols and other Cucurbitan-type saponins)	25 µg/mL [132]	Lifespan	LT50	N2	L1	OP50	Solid agar	added to OP50, then spread onto the surface of the NGM plates	0.1% EtOH	Improved	n.d.
									Motility	body bend and head swing counts							No effect	
									Autofluorescence	GFP filter, microscopy + image processing							Improved	
									Proteotoxicity	Paralysis assay with constitutive age -dependent YFP::polyglutamine aggregation in muscles	AM140						Improved	
										Paralysis assay with temperature-dependent amyloid beta expression in muscles	CL4176						Improved	
Caryocar villosum	Caryocaraceae	Fruit shells	Hydroethanolic (80%)	Crude extract	Total antioxidants	HPLC-MS^2	25 phenols and 17 saponins were tentatively identified by LC-MS (e.g. caryocarosides, chebulic acid, gallic acid, phyllanthusiin B, phyllanthusiin C, ellagic acid, chebulagic acid, hexahydroxydiphenic acid)	50, 100, and 200 µg/mL [32]	Lifespan	Mean and median lifespan	N2	A	OP50	S medium	Diluted in liquid	0% DMSO	Improved	*daf-16, skn-1*
									ROS stress survival	Induced with 80 µM juglone		L1					Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356	L4					Improved	
										SKN-1:GFP	LD1						No effect	
Cratoxylum formosum	Hypericaceae	Twigs	Hydroethanolic (50%)	Crude extract	n.d.	HPLC-UV	Several constituents tentatively identified by HPLC-UV and reference standards (gallic acid, chlorogenic acid and caffeic acid)	0.1 – 100 µg/ml [106]	ROS stress survival	Induced with 160 µM juglone	CL2070	L1	OP50	Solid agar	Diluted in OP50	0.01% DMSO	Improved	daf-16, hsf-1, skn-1
									ROS levels	Measurement of dichlorofluorescein fluorescence with plate reader	CL2006							
									Proteotoxicity	Paralysis assay with constitutive amyloid beta expression in muscles								

Phyllanthus emblica	Phyllanthaceae	Fruits	Hydroethanolic (45%)	Crude extract	Total phenols, total antioxidants	HPLC-MS	Several compounds tentatively identified using HPLC-MS (Protocatechuic acid quercetin, myricetin, ellagic, gallic, naringenin, cyanidin 3-arabinoside, genistin, chlorogenic acids and glycosides)	0.1, 0.2, 0.4, 0.8 and 1.2 mg/mL [133]	Lifespan	Mean lifespan	N2	L4	heat-killed E. coli OP50	Solid agar	n.d.	0.1% DMSO	Improved	
									Thermal stress survival	Induced with 35 °C		L1					Improved	
Glochidion zeylanicum		Leaves	Hexane	Crude extract	Total phenols, total flavonoid, total antioxidants	GC-MS	Several compounds tentatively identified using GC-MS dereplication (e.g. pentadecanoic acid, n-hexadecanoic acid, phytol, octadecatrienoic acid, octadecanoic acid, hexanedioic acid and benzoic acid)	25, 50 and 100 µg/ml [34]	Lifespan	Mean lifespan	N2	L4	OP50	Solid agar	in OP50 lawn	1% DMSO	Improved	skn-1, daf-16
									Pharyngeal pumping	Pumping rate							Improved	
									Autofluorescence	(360/ 460) filter; microscopy + image processing		L1		S medium	Diluted in liquid		Improved	
									ROS stress survival	Induced with 80 µM juglone							Improved	
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence; microscopy + Image Processing							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
										SKN-1:GFP	LD1						No effect	
			Methanol	Crude extract	Total phenols, total flavonoid, total antioxidants	HPLC-MS	Several compounds tentatively identified using UPLC-MS (e.g. l-proline, resveratrol 4'-methyl ether, quinic acid, gallic acid, quercitrin/kaempferol 3-alpha-d-glucoside, ginkgolide b, glycitin, and catechin, quercetin)	1.0, 2.5, and 5 µg/ml [34]	Lifespan	Mean lifespan	N2	L4	OP50	Solid agar	in OP50 lawn	1% DMSO	Improved	skn-1, daf-16
									Pharyngeal pumping	Pumping rate							Improved	
									Autofluorescence	(360/ 460) filter; microscopy + image processing		L1		S medium			Improved	
									ROS stress survival	Induced with 80 µM juglone							Improved	
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence; microscopy + Image Processing							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
										SKN-1:GFP	LD1						Improved	
Ziziphus jujuba	Rhamnaceae	Seed	Hydroethanolic (70%)	Crude extract of degreased (hexane) seeds	Total antioxidants, total flavonoids	HPLC-MS[2]	10 compounds tentatively identified using HPLC-MS[2] (e.g. swertisin, isovitexin, 6'''-(4''''-O-glc)-vanilloylspinosin, isovitexin -glucopyranoside, 6'''-p-hydroxybenzoylspinosin, 6'''-p-coumaroylspinosin)	10, 50, 100 µg/mL [61]	Lifespan	Minimum, median, maximum lifespan	GMC101	L4	OP50	Solid agar	n.d.	n.d.	Improved	n.d.
									Thermal stress survival	Induced with 35 °C							Improved	
									Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles							Improved	
Potentilla aurea	Rosaceae	Herb	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	No effect	n.d.
Armeniaca mume		Flower (buds)	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	No effect	n.d.
Prunus × yedoensis		Flower (petal)	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the	n.d.	No effect	n.d.

															surfaces of the NGM			
Prunus persica		Flower (petal)	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	No effect	n.d.
Prunus avium		Fruit	MeOH-0.5 N HCl (95:5)	Anthocyanin enriched fraction obtained by C18 SPE	Total phenols, total anthocyanidins	HPLC-MS^2	Several compounds tentatively identified with HPLC-MS^2 (neochlorogenic acid, 3-coumaroylquinic acid, feruloylquinic acid, 4-coumaroylquinic acid, cyanidin-3-O-glucoside, cyanidin-3-O-rutinoside, pelargonidin-3-O-rutinoside, peonidin-3-O-rutinoside, dicaffeoylquinic acid, quercetin-3-O-glucoside, quercetin-3-O-rutinoside)	25 µg/mL [134]	Thermal stress survival	Induced with 37°C	N2	L1	OP50	Solid agar	Added to NGM during preparation	n.d. concentration of DMSO	Improved	n.d.
		Fruit pomace	Combined hydromethanolic (50%, acidified pH=2) and hydroacetone extract (70%)	Crude extract	Total phenols, total anthocyanidins, total antioxidants	HPTLC, DART-MS	Several compounds tentatively identified using DART-MS (e.g. dihydroxybenzoic acid, coumaric acid, gallic acid, dihydroxycoumarin acid, caffeic acid, syringaldehyde, ferulic acid, sinapaldehyde, hydroxyferulic acid, pinocembrin, kaempferol, catechin, procyanidin B2, quercetin, taxifolin, (epi)gallocatechin, myricetin, methoxytaxifolin)	100 and 400 µg/mL [107]	Locomotion	n.d.	N2	L1	OP50	Solid agar	Supplemented to NGM plates	5% DMSO	Improved	
									ROS stress survival	Induced with 2mM H_2O_2							No effect	
									Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	CL4176	L1					No effect	
Crataegus pinnatifida		Fruits	Hydroethanolic (80%)	Crude extract	Total phenols, total flavonoids	HPLC-UV	Procyanidin B2 and epicatechin were tentatively identified using HPLC-UV	25, 50 and 100 µg mL [135]	Lifespan	Mean lifespan	N2	L4	Heat inactivated OP50	Solid agar	Covered onto plate	n.d.	Improved	daf-2, age-1, akt-1, daf-16, skn-1, and hsf-1
									Locomotion	Number of body bends							Improved	
									Pharyngeal pumping	Pumping rate							No effect	
									Autofluorescence	Filter (380/420 nm); microscopy + image processing							Improved	
									thermal stress survival	Induced with 35°C							Improved	
									UV stress survival	Induced with uv 75 µW/cm²							Improved	
									ROS stress survival	Induced with 30% H_2O_2							Improved	
										Induced with 2 mM paraquat							Improved	
										Induced with 500 µM juglone							Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence; microscopy and image processing							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
										SKN-1:GFP	LG333						Improved	
Rosa chinensis		Flower (petals)	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the	n.d.	No effect	n.d.

															surfaces of the NGM			
Rosa rugosa		Flowers	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	No effect	n.d.
			Aqueous	Crude extract (digestion) of steam-distilled flowers	Total phenols	HPLC-MS²	23 compounds tentatively identified using HPLC-MS² (e.g. glycosides of gallates, hexahydroxydiphenic acid, quercetin, kaempferol, eriodictyol)	25, 50, 100, and 200 µg/ml [52]	Lifespan thermal stress survival	mean lifespan Induced with 35°C	N2	L4	OP50	Solid agar	n.d.	0% DMSO	Improved Improved	n.d.
Rosa roxburghii		Fruit pomace	Hydroethanolic (70%)	Crude extract	Total phenols, total flavonoids, total antioxidants	HPLC-MS²	Several compound tentatively identified and major phenols were quantified with HPLC-MS² (gallic acid, gallocatechin, epigallocatechin, catechin, hydroxybenzoic acid, epicatechin, ellagic acid, ferulic acid and quercetin)	20, 50 and 100 µg/ mL [136]	ROS stress survival Antioxidant capacity	Induced with 50 mM paraquat Measurement of intracellular dichlorofluorescein fluorescence after treatment with paraquat	N2	L4	NA22	S medium	Diluted in liquid	n.d.	Improved Improved	n.d.
			Aqueous (4M NaOH)	Ethylacetat Fraction obtained from aqueous crude extract by liquid-partition	Total phenols, total flavonoids, total antioxidants	HPLC-MS²	Several compound tentatively identified and major phenols were quantified with HPLC-MS² (gallic acid, gallocatechin, epigallocatechin, catechin, hydroxybenzoic acid, epicatechin, ellagic acid, ferulic acid and quercetin)	20, 50 and 100 µg/ mL [136]	ROS stress survival Antioxidant capacity	Induced with 50 mM paraquat Measurement of intracellular dichlorofluorescein fluorescence after treatment with paraquat	N2	L4	NA22	S medium	Diluted in liquid	n.d.	Improved Improved	n.d.
Rosa x hybridus		Flower (petals)	Methanol:Water:Formic acid (80:20: 0.1, v/v/v)	Crude extract	Total phenols, total antioxidants, total flavonoids	HPLC-MS²	Several compounds tentatively identified using HPLC-MS² (Cyanidin 3,5-O-diglucoside, cyanidin 3-O-glucoside, cyanidin 3-O-rutinoside, (+)-catechin, (−)-epicatechin, procyanidin dimers and trimers, glycosides of kaempferol myricetin, quercetin, 5-O-galloylquinic acid, ellagic acid, Ellagic acid glycosides, gallic acid, p-coumaric acid)	100 µg/mL [137]	Lifespan Proteotoxicity	n.d. Paralysis assay with temperature-dependent amyloid beta expression in muscles	N2 CL4176	L1 L3	OP50	Solid agar	added to the OP50	0% DMSO	No effect Improved	n.d.
Eriobotrya japonica		Flowers	Hydroethanolic (80%)	Crude extract	Total phenols, total flavonoids, total terpenes, total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	Improved	n.d.
		Leaves	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	Improved	n.d.
Rubus idaeus		Fruits	Aqueous acetone (80%)	Crude extract	Total phenols, total flavonoids	HPLC-UV	Several constituents were tentatively identified by HPLC-UV (ellagic acid, salicylic acid, chlorogenic acid, p-coumaric,	20, 40 and 80 mg/mL [138]	Lifespan Locomotion Autofluorescence	relative lifespan Motility classes microscopy + Image processing (n.d. filter)	N2	A L4	OP50	Solid agar	n.d.	n.d.	Improved Improved Improved	*daf-16, daf-2, age-1, akt-2, sir-2.1,*

							quercitrin, (+) catechin and luteolin)		Thermal stress survival	Induced with 35 °C		n.d.					Improved	*skn-1, jnk*-1
									UV stress survival	Induced with UV-B 1200 J/m^2		n.d.					Improved	
									Nuclear translocation	DAF-16::GFP	TJ356	n.d.					Improved	
Celastrus paniculatus	Celastraceae	Seeds	Dichloromethane	Fraction enriched with dihydro-β-agarofurans obtained after extraction of suspended crude extract in petrolether with 75% EtOH	n.d.	HPLC-MS, NMR	Bioactivity guided fractionation led to the isolation of 30 dihydro-β-agarofurans including celaspaculin H, celaspaculin E, celaspaculin L and celaspaculin N	27.5 µg/m[90]l	Lifespan	Mean and maximum lifespan	N2	L4	OP50	Solid agar	n.d. concentration of DMSO	n.d.	Improved	*daf-16*
Bixa orellana	Bixaceae	Seeds	Ethanol:isopropyl acetate:water	Organic fraction of the extraction supernatant	n.d.	HPLC-UV	Bixin (30%) and δ-tocotrienol (10%) were quantified using HPLC-UV and reference compounds	60, 100, or 170 µg/mL [98]	Lifespan	Medium and maximum lifespan	N2	L4	UV-inactivated OP50	Solid agar	added to the solidified NGM	3% EtOH	Improved	*hsf-1, daf-16*
									Thermal stress survival	Induced with 35°C							Improved	
									ROS stress survival	Induced with 1.4 mM H_2O_2							Improved	
Humulus lupulus	Cannabaceae	Flowers	Aqueous	Crude extract	Total phenols, total antioxidants	HPLC-MS, NMR	42 compounds tentatively identified using HPLC-MS and NMR (glycosyl flavonoids (quercetin, kaempferol, luteiolin), procyanidins, catechin, 3-O-caffeoylquinic acid, 4-O-p-coumaroyl quinic acid, syringin)	10–250 µg/mL	Proteotoxicity	Paralysis assay with constitutive amyloid beta expression in muscles	CL2006	L3	OP50	Solid agar	Fed to the worms	0% DMSO	Improved	n.d.
Morus alba	Moraceae	Fruits	Ethanol	Anthocyan-enriched fraction obtained after ion exchange chromatography	Total protein, total carbohydrate	HPLC-UV	Cyanidin-3-glucoside, cyanidin-3-rutinoside quantified with HPLC-UV and standards	100 µg/mL [139]	Lifespan	Mean lifespan under high glucose (50 mM) conditions	N2	Adult	OP50	Solid NGM agar	Diluted in OP50	n.d.	Improved	daf-2
									Autofluorescence	under high glucose (50 mM) conditions; DAPI filter set Micrsocopy + image processing						n.d.	Improved	
		Leaves	Hydroethanolic (pH=4)	Crude extract	Total phenols	HPLC-UV	Several phenols tentatively identified with HPLC-UV and standards (e.g. epicatechin, hyperoside, vanillic acid, syringic acid)	25 µg/mL [140]	Lifespan	Mean lifespan	N2	L1	Heat inactivated OP50	Solid NGM agar	n.d.	n.d.	Improved	*daf-12, daf-16, pha-4* and *nhr-80*
									ROS stress survival	Induced with 0.5 mM H_2O_2							Improved	
										Induced with 1 mM H_2O_2							Improved	
										Induced with 1.5 mM H_2O_2							Improved	
										Induced with 5 mM paraquat							Improved	
Morus nigra		Fruits	Aqueous	Crude extract	n.d.	HPLC-UV	Several compounds were tentatively identified and quantified with HPLC-UV and standards (protocatechuic acid, gallic acid, ferulic acid, chlorogenic acid, rutin, isoquercitrin, astragalin, quercetin, morin, cyanidin-3-Oglucoside)	0.01, 0.1 and 1 mg/mL [29]	Lifespan	Median and maximum lifespan	N2	L4	OP50	Solid NGM agar	Added to the NGM	0% DMSO	Improved	*daf-16, sod-3, gst-4*
											CL4176						Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence	N2	L1					Improved	
											CL4176						Improved	
									Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	CL4176						Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
Streblus asper		Leaves	Ethanol	Crude extract	Total phenols, total flavonoids, total antioxidants	HPLC-MS	Several phenols tentatively identified with HPLC-MS (e.g. andrographolide, carnosic acid, (+)-3-O-β-D-fucopyranosylperiplogenin, strebluslignanol, magnolignan A, α-linolenic	25 and 50 µg/mL	Lifespan	Mean and maximum lifespan	N2	L1	OP50	Solid NGM agar	Supplemented to OP50	n.d. concentration of DMSO	Improved	n.d.
												L4					No effect	

							acid, oleoyl-oxazolopyridine and taxifolin)											
Sida cordifolia	Malvaceae	Herb	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	No effect	n.d.
Hibiscus sabdariffae		Flowers	Hydroethanolic (80%)	Crude extract	Total phenols, total flavonoids, total terpenes, total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	Improved	n.d.
			Aqueous	Crude extract	n.d.	n.d.	n.d.	0.25 – 1 mg/ml [3]	Lifespan	Mean and median lifespan	N2	L4	OP50	Liquid NGM	Diluted in liquid	0 % DMSO	Improved	daf-16, skn-1
									Locomotion	Motility classes							Improved	
									Thermal stress survival	Induced with 35°C							No effect	
									ROS levels	Measurement of dichlorofluorescein fluorescence with plate reader							No effect	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
										SKN-1:GFP	LD001						Improved	
									Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	CL4176	L1					Improved	
Luehea divaricata		Leaves	Hydroethanolic (70%)	Crude extract	Total phenols	HPLC-UV	Rutin was tentatively identified by HPLC-DAD comparison to standard	100, 200, 400 and 800 µg/ml [63]	ROS stress survival	Induced with 100 mM H_2O_2	N2	A	No food	S medium	Diluted in liquid	0.7% EtOH	No effect	n.d.
										Induced with 100 µM juglone							Improved	
										Induced with 100 µM Fe^{2+}							Improved	
										Induced with 50 mM sodium nitroprusside							No effect	
Endopleura uchi	Humiriaceae	Bark	Aqueous	Crude extract	Total phenols	n.d.	n.d.	50, 100, 200 and 300 µg/mL [141]	Lifespan elongation	n.d.	BA17	Adult	OP50	Solid agar	n.d.	0% DMSO	Improved	DAF-16
									Pharyngeal pumping	Pumping rate	N2						Improved	
									ROS stress survival	Induced with 80 µM juglone		L1		S medium	Diluted in liquid		Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence							Improved	
									Proteotoxicity	YFP tagged polyglutamine in muscles Microscopy + Image Processing	AM141						Improved	
Brassica rapa L. ssp. chinensis (L.) Hanelt var. purpurea	Brassicaceae	Fresh stems	methanol/HCl (99.9 : 0.1, v/v)	Crude extract	Total phenolics Total anthocyanins	n.d.	n.d.	2 mg/ml [142]	Lifespan elongation	Mean lifespan	N2	L1	OP50	S medium	Diluted in liquid	0% DMSO	Improved	n.d.
									ROS stress survival	Induced with 100 mM paraquart							Improved	
									ROS levels	Measurement of dichlorofluorescein fluorescence with plate reader							Improved	
Brassica rapa L. ssp.		Fresh stems	methanol/HC	Crude extract	Total phenolics Total	n.d.	n.d.	2 mg/ml [142]	Lifespan elongation	Mean lifespan	N2	L1	OP50	S medium	Diluted in	0% DMSO	No effect	n.d.

chinensis (L.) Hanelt var. chinensis			l (99.9 : 0.1, v/v)		anthocyanins				ROS stress survival	Induced with 100 mM paraquart					liquid		Improved	
									ROS levels	Measurement of dichlorofluorescein fluorescence with plate reader							Improved	
Brassica rapa L. ssp. chinensis (L.) Hanelt var. parachinensis		Fresh stems	methanol/HCl (99.9 : 0.1, v/v)	Crude extract	Total phenolics Total anthocyanins	n.d.	n.d.	2 mg/ml [142]	Lifespan elongation	Mean lifespan	N2	L1	OP50	S medium	Diluted in liquid	0% DMSO	No effect	n.d.
									ROS stress survival	Induced with 100 mM paraquart							Improved	
									ROS levels	Measurement of dichlorofluorescein fluorescence with plate reader							Improved	
Citrus aurantium	Rutaceae	Flowers	Hydroethanolic (80%)	Crude extract	Total phenols, total flavonoids, total terpenes, total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	Improved	n.d.
Aquilaria crassna	Thymelaeaceae	Leaves	Hexane	Crude extract	Total phenols, total flavonoids, total antioxidants	GC-MS	Several constituents were tentatively identified with GC-MS and quantified (e.g. 24-methylenecycloartan3-one, squalene, (3.α.)-friedooleanan-3-ol, tritriacontane, vitamin E, β-amyrin, 9,19-cyclolanostan-3-ol- 24,24-epoxymethanoacetate, lupenonene, hentriacontane, olean-12en-3-one); two compounds (stigmastrol and sitosterol) were isolated	10 and 50 µg/mL [143]	Lifespan	Mean lifespan	N2	L1	Heat-inactivated OP50	Solid agar with 50 mM glucose	n.d.	0.1% DMSO	Improved	daf-16, sod-3, aqp-1
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence							Improved	
Azadirachta indica	Meliaceae	Fruits	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	No effect	n.d.
Acer saccharum	Sapindaceae	Phloem juice	Maple Syrup	Maple Syrup	n.d.	GC-MS	Four constituents identified in EtOAc fraction (catechol, gallic acid, 3,4-dihydroxybenzaldehyde, syringaldehyde)	4% [11]	Neurodegeneration	Paralysis assay with age-dependent TDP-43 toxicity of GABAergic neurons	Trangene worm with genotype unc-47p::TDP-43A315T	L4	OP50	Solid agar	added directly to the NGM	0% DMSO	Improved	daf-16
										neurodegeneration monitored by GFP tagged unc-47 in GABAergic neurons	Trangene worm with genotype unc-47p::GFP						Improved	
				Fraction of maple syrup obtained by SPE with XAD-16 resin, removal of sugars with water,	Total sugars, total phenols	HPLC-UV	37 constituents were tentatively identified by HPLC-DAD and comparison to reference compounds (e.g.4-hydroxy-2-	50–500 µg/mL [144]	Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in	CL4176	L1	OP50	Solid agar	added directly to the NGM	0% DMSO	Improved	n.d.

				and elution of the fraction with ethanol			(hydroxymethyl)-5-methyl-3(2H)-furanone, 4-acetylcatechol, tyrosol, catechaldehyde, 1,2-diguaiacyl-1,3-propanediol, leptolepisol D, syringaldehyde, syringenin, scopoletin, threo-guaiacylglycerol-β-O-4’-dihydroconiferyl alcohol, erythro-guaiacylglycerol-β-O-4’-dihydroconiferyl alcohol, dehydroconiferyl alcohol, sakuraresinol, secoisolariciresinol, acernikol, (E)-3,3’-dimethoxy-4,4’-dihydroxystilbene)			muscles								
Paullinia cupana		Semen	Hydroethanolic (70%)	Crude extract	Total antioxidants	HPLC-UV	Caffeine, theobromine, catechin, and epicatechin were quantified with HPLC-UV and standards	10 and 50 mg/ml [145]	Lifespan	Mean lifespan	N2	L1	OP50	Solid agar	mixed with OP50	0% DMSO	Improved	
									Thermal stress survival	Induced with 35°C							Improved	
									ROS stress survival	Induced with 10 mM tert-butyl hydroperoxide							Detrimental	
									ROS levels	Measurement of dichlorofluorescein fluorescence with plate reader							Improved	
											CL2006						Improved	
									Antioxidant capacity	Measurement of dichlorofluorescein fluorescence after treatment with H_2O_2 with plate reader	N2						Improved	
									Proteotoxicity	YFP tagged polyglutamine in muscles; microscopy and image Processing	AM141						Improved	
										Paralysis assay with temperature-dependent amyloid beta expression in muscles	CL4176						Improved	
										Paralysis assay with constitutive amyloid beta expression in muscles	CL2006						Improved	
										YFP tagged polyglutamine in ASH neurons; quantification of fluorescence by microscopy and image processing	HA759						Improved	
									Autophagy	GFP::LGG-1 marked autophagic vesicles were counted in seam cells	DA2123						Improved	
				Decaffeinated fraction obtained by boiling of crude extract 1 N H_2SO_4 and partition between alkaline aqueous	n.d.	TLC	Absence of caffeine was confirmed with TLC	10 and 50 mg/ml [145]	Proteintoxicity	Paralysis assay with constitutive amyloid beta expression in muscles	CL2006	L1	OP50	Solid agar	mixed with OP50	0% DMSO	Improved	

				extract and $CHCl_3$														
Anacardium occidentale	Anacardiaceae	Leaves	methanol	Crude extract	total phenolic content, total flavonoid content	HPLC-MS, GC-MS	n.d.	1, 2.5 and 5 ug/ml [33]	Lifespan elongation	Mean lifespan	N2	L4	OP50	Solid agar	Extracts in E. coli	1% DMSO	Improved	*daf-16, skn-1*
									Pharyngeal pumping	Pumping rate							Improved	
									Autofluorescence	Filter (360-370/460) microscopy + image processing	BA17						Improved	
									ROS stress survival	Induced with 80 µM juglone	N2	L1		S Medium	Diluted in liquid		Improved	
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
										SKN-1:GFP	LD1						Improved	
			hexane	Crude extract	Total phenols, total flavonoids	HPLC-MS, GC-MS	n.d.	25, 50 and 100 ug/ml [33]	Lifespan elongation	Mean lifespan	N2	L4	OP50	Solid agar	Extracts in E. coli	1% DMSO	Improved	*daf-16, skn-1*
									Pharyngeal pumping	Pumping rate							Improved	
									Autofluorescence	Filter (360-370/460) microscopy + image processing	BA17						Improved	
									ROS stress survival	Induced with 80 µM juglone	N2	L1		S Medium	Diluted in liquid		Improved	
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence Microscopy + Image Processing							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
										SKN-1:GFP	LD1						No effect	
Syzygium aromaticum	Myrtaceae	Flowers	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	Improved	n.d.
Syzygium nervosum		Fruits	Ethanol	Crude extract	Total antioxidants	n.d.	n.d.	1-100 µg/mL [146]	Lifespan	Mean median and mean maximum	N2	A	OP50	M9 buffer	Diluted in liquid	n.d. concentration of DMSO	Improved	daf-16, skn-1 and sir-2.1
									Pharyngeal pumping	Pumping rate				Solid NGM agar	Swapped onto plate		No effect	
									Autofluorescence	microscopy + Image processing (n.d. filter)				M9 buffer	Diluted in liquid		Improved	
Syzygium jambos		Leaves	Methanol	Crude extract	Total phenols, Total antioxidants	HPLC-MS/MS	HPLC-MS^2 dereplication of 17 constituents (e.g. quercetin 3-O-xylosyl-(1→2) rhamnoside, myricetin 3-O-xylosyl-(1→2) rhamnoside, ellagic acid rhamnoside, hexahydroxydiphenoyl-hexoside)	50 - 200 µg/mL [147]	ROS stress survival	Induced with 80 µM juglone	N2	L1	OP50	S Medium	Diluted in liquid	0% DMSO	Improved	daf-16
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence; microscopy + Image Processing							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
Pimenta dioica		Fruits	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane)	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	Improved	n.d.

				material, tannin depleted by polyamide SPE														
Eugenia uniflora		Fruits	Ethanol	Crude extract	n.d.	HPLC- MS-MS	HPLC-MS^2 dereplication of 27 constituents + identification/quantification using references (e.g. delphinidin 3-O-glucoside cyanindin 3-O-glucoside, pelargonidin 3-O-glucoside, quercetin, quercetin glycosides, myricetin, myricetin glycosides, quinic acid, galloylquinic acid, galloyl hexoside)	5, 50, 100, 250 and 500 µg [148]	Lifespan elongation	n.d.	N2	L1	No food	0.5% NaCl solution	Diluted in liquid	n.d.	Improved	*daf-16*
									thermal stress survival	Induced with 35 °C							Improved	
									ROS stress survival	Induced with 0.6 mM H_2O_2							Improved	
										Induced with 75 µM juglone		L4					Improved	
									Antioxidant capacity	Measurement of dichlorofluorescein fluorescence after incubation with 0.6 mM H_2O_2; plate reader		L1					Improved	
									Oxidative damage to proteins	Measurement of dinitrophenylhydrazine absorbance in worm lysates with spectrophotometer							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356	L4					Improved	
Eugenia supraaxillaris		leaves	hydromethanolic (75%)	Extract was defatted with liquid-liquid partition (water-hexane)	Total phenols, total antioxidants	HPLC-UV-MS	Five compounds were isolated with polyamide chromatography and characterized by NMR (gallic acid, 2, 6 di-O-(α/β)-^{4}C1- galloyl glucose, nilocitin, myricetin-3-O-xylopyranosyl(1 → 2)-α-^{1}C4-rhamnopyranoside, myricetin 3-O-α-^{1}C4-rhamnopyranoside); 27 compounds tentatively identified using HPLC-MS (e.g. galloyl glucose, sinapic acid hexoside, myricetin pentoside)	50, 100 and 200 µg/mL [36]	ROS stress survival	Induced with 80 µM juglone	N2	L1	OP50	S medium	Diluted in liquid	0% DMSO	Improved	*daf-16*
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence; microscopy + Image Processing							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
Punica granatum	Lythraceae	Fruits	Aqueous	Fruit juice	n.d.	n.d.	n.d.	0.01%, 0.1%, 1%, 3%, 5%, 10% and 25 % (v/v) [39]	Lifespan	Mean lifespan	N2	L4	OP50	S medium	Diluted in liquid	0% DMSO	Improved	n.d.
		Fruits	Ethanol	Crude extract	n.d.	n.d.	n.d.	1.25, 2.5, 5, 10 and 20 mg/ml [149]	Lifespan	Mean lifespan	N2	L4	Heat-inactivated OP50	Solid agar	Diluted in liquid NGM before pouring to plates	0% DMSO	Improved	n.d.
		Fruit pomace	n.d.	Commercial polyphenol enriched fraction of the pomace exctract	n.d.	n.d.	n.d.	5, 10, 20, 40, 80, 160, and 320 µg/ml [39]	Lifespan	Mean lifespan	N2	L4	OP50	S medium	Diluted in liquid	0% DMSO	Improved	daf-16
		Fruit peel	Hexane	Crude extract	Total antioxidants, total phenols	n.d.	n.d.	100, 300 and 500 µg/mL [150]	Lifespan	n.d.	N2	L4	OP50	Solid agar	n.d.	n.d.	No effect	n.d.
			Ethylacetat	Crude extract	Total antioxidants, total phenols	n.d.	Several constituents were tentatively identified with GC-MS	100, 300 and 500 µg/mL [150]	Lifespan	n.d.	N2	L4	OP50	Solid agar	n.d.	n.d.	Improved	n.d.
			Methanol	Crude extract	Total antioxidants, total phenols	n.d.	n.d.	100, 300 and 500 µg/mL [150]	Lifespan	n.d.	N2	L4	OP50	Solid agar	n.d.	n.d.	Improved	n.d.

Terminalia chebula	Combretaceae	Fruits	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	No effect	n.d.
Paeonia lactiflora	Paeoniaceae	Stamens	Aqueous (70%)	Crude extract	Total antioxidants	HPLC-MS^2	Several compounds were tentatively identified with HPLC-MS^2 (e.g isorhamnetin-3,7-O-diglucoside, Naringenin-4'-O-glucoside, dihydrokaempferol-7-O-glucoside, 6-hydroxykaempferol-3,6-O-diglucoside, spiraeoside, phenolic acids, oxypaeoniflorin, paeoniflorin, 8-debenzoylpaeoniflorin, trigonelline, 3-O-galloyl-glucose and digallic acid)	0.2 - 1.2 mg/mL [151]	Lifespan	Mean and maximum lifespan	N2	L4	OP50	Solid agar	added to the NGM before OP50 were spread	0% DMSO	Improved	n.d.
									Locomotion	Number of head thrashes, body bends							Improved	
									Autofluorescence	525 nm bandpass filter; microscopy + image processing							Improved	
									Thermal stress survival	Induced with 37°C							Improved	
									ROS stress survival	Induced with 200 µM paraquat							Improved	
Viscum album coloratum	Santalaceae	Herb	Aqueous	Crude extract	n.d.	n.d.	n.d.	50 or 200 µg/ml [152]	Lifespan	Mean lifespan	N2	A	n.d.	Solid agar	added to standard normal growth agar plates	n.d.	Improved	sir-2.1
									ROS stress survival	Induced with 20 mM paraquat		L1					Detrimental	
Ximenia americana var. caffra	Olacaceae	Leaves	Methanol	Crude extract	Total phenols, total antioxidants	HPLC-MS^2	23 compounds tentatively identified with HPLC-MS^2 (e.g. rutin, isoquercetin, and avicularin, kaempferol 3-O-glucoside, kaempferol 3-neohesperidoside, and kaempferol 3-O-arabinoside, procyanidin B1, epicatechin, and catechin, quinic acid)	25, 50 and 100 µg/mL [35]	ROS stress survival	Induced with 80 µM juglone	N2	L1	OP50	S medium	Diluted in liquid	0% DMSO	Improved	daf-16
									Antioxidant capacity	Measurement of intracellular dichlorofluorescein fluorescence after treatment with juglone; microscopy and image processing							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
Portulaca oleracea	Portulacaceae	n.d.	Hydroethanolic (45%)	Ethylacetate fraction generated as followed (crude extract was suspended in water and fractionally extracted with petroleum ether, chloroform and then ethyl acetate)	n.d.	HPLC-UV	Twelve phenolic acids and flavonoids identified and quantified with HPLC-UV and reference compounds (p-coumaric acid, salicylic acid, rosmarinic acid, vanillic acid, ferulic acid dihydroxy-benzoic acid, p-hydroxy-benzoic acid, caffeic acid, syringic acid, genistin, quercitrin hesperidin)	0, 250, 500, 1,000 µg/mL [153]	Lifespan	Mean lifespan	N2	L4	OP50	Solid agar	Added to the OP50 spreaded NGM surface	0.2% DMSO	Improved	daf-16, sod-3,and cat-1
									Locomotion	Motility classes							Improved	
									Autofluorescence	DAPI filter; microscopy + Image processing							Improved	
									Thermal stress survival	Induced with 35°C							Improved	
									UV stress survival	Induced with UV-B 1200 J/m^2							Improved	
									ROS stress survival	Induced with 40 mM paraquart							Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence; platereader							Improved	
Coccoloba alnifolia	Polygonaceae	Leaves	Ethanol	Crude extract of degreased leaves (hexane & chloroform)	Total sugars, phenols, proteins and antioxidants	TLC and HPLC-DAD	4 compounds tentatively idenfied using TLC and HPLC-DAD and reference compounds (gallic acid, p-coumaric acid, vitexin, isovitexin)	1 and 10 mg/ml [154]	ROS stress survival	Induced with 8 mM tert-butyl hydrogen peroxide	N2	L1	OP50	Solid agar	added to the NGM	0% DMSO	Improved	n.d.
			Aqueous	Crude extract of previously extracted material (hexane, chloroform, ethanol,	Total sugars, phenols, proteins and antioxidants	TLC and HPLC-DAD	4 compounds tentatively idenfied using TLC and HPLC-DAD and reference compounds (gallic acid, p-	1 and 10 mg/ml [154]	ROS stress survival	Induced with 8 mM tert-butyl hydrogen peroxide	N2	L1	OP50	Solid agar	added to the NGM	0% DMSO	Improved	n.d.

				methanol)			coumaric acid, vitexin, isovitexin)											
Achyranthes bidentata	Amaranthaceae	Roots	Butyl-methyl ether – methanol	Combined crude extracts of (1) butyl-methyl ether (MTBE) - methanol and (2) methanol	n.d.	HPLC-MS	n.d.	30 µg/ml [49]	Thermal stress survival	Induced with 37°C	N2	L4	OP50	Solid NGM agar	added to the NGM agar plates	0.05% DMSO	No effect	n.d.
Opuntia ficus-indica	Cactaceae	yellow fruits	Aequeous			n.d.	n.d.	0.1, 0.5, 1% w/v [82]	Lifespan elongation	Mean lifespan after 2 d of treatment measured by lifespan machine	N2	L1	heat inactivated E. coli OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO	Improved	
		Red fruits	Aequeous			n.d.	n.d.	0.1, 0.5, 1% w/v [82]	Lifespan elongation	Mean lifespan after 2 d of treatment measured by lifespan machine	N2	L1	heat inactivated E. coli OP50	Liquid M9/S medium mixture	Diluted in liquid	0% DMSO	No effect	
Vaccinium corymbosum	Ericaceae	Fruits	Aqueous acetone (80%)	Crude extract	n.d.	n.d.	n.d.	50, 100 and 200 mg/mL [155]	Lifespan	Mean lifespan	N2	A	OP50	Solid agar	n.d.	n.d.	Improved	daf-16, cat-1, sod-3, skn-1, sek-1, nhr-8 and mev-1
									Locomotion	Motility classes							Improved	
									Autofluorescence	Microscopy + image processing (n.d. filter)							Improved	
									thermal stress survival	Induced with 35 °C							Improved	
									UV stress survival	Induced with UV-B (120 mJ/cm²)							Improved	
									ROS stress survival	Induced with 5 mM paraquat							Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence							Improved	
Vaccinium vitis-idaea		Fruits	Aqueous acetone (80%)	Crude extract	n.d.	n.d.	n.d.	50 and 400 µg/mL [102]	Lifespan	Mean lifespan	N2	A	OP50	NGM	Mixed with NGM	0% DMSO	Improved	daf-16
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
										HSF1::GFP	OG497						No effect	
Vaccinum uliginosum		Fruits	Aqueous acetone (80%)	Crude extract	n.d.	n.d.	n.d.	50 and 200 µg/mL [102]	Lifespan	Mean lifespan	N2	A	OP50	NGM	Mixed with NGM	0% DMSO	Improved	daf-16
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
										HSF1::GFP	OG497						No effect	
			Aqueous acetone (80%)	Crude extract	Total phenols, total anthocyanins	n.d.	n.d.	100, 200 and 400 µg/mL [28]	Lifespan	Mean and Median lifespan	OW13	L4	OP50	Solid agar	spread on top of NGM plates seeded with OP50	0.1% DMSO	No effect	sir-2.1
									Locomotion	Motility Classes							Improved	
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence							Detrimental	
									Proteintoxicity	YFP tagged α-synuclein expression in muscles, Microscopy & image processing							Improved	
													heat-inactivated OP50				Improved	
				Fraction enriched in proanthocyanidins (n.d. procedure)	n.d.	n.d.	n.d.	400 µg/mL [28]	Proteintoxicity	YFP tagged α-synuclein expression in muscles, Microscopy & image processing	OW13	L4	OP50	Solid agar	spread on top of NGM plates seeded with OP50	0.1% DMSO	Improved	sir-2.1
								400 µg/mL [28]	Proteintoxicity	YFP tagged α-synuclein expression in muscles, Microscopy & image processing	OW13	L4	OP50	Solid agar	spread on top of NGM plates seeded with	0.1% DMSO	Improved	sir-2.1

															OP50			
			n.d.	n.d.	n.d.	n.d.	n.d.	2 mg/ml [156]	Lifespan	Mean and Median lifespan	N2	L1	OP50	Solid agar	overlaid onto NGM	0% DMSO	Improved	n.d.
												L4					Improved	
									Locomotion	Number of body bends		L1					Improved	
												L4					No effect	
									Thermal stress survival	Induced with 37 °C		L1					Improved	
												L4					Improved	
Vaccinium macrocarpon		Fruits	n.d.	n.d.	n.d.	n.d.	n.d.	2 mg/mL [157]	Lifespan	Mean lifespan	N2	L1	OP50	Solid agar	spread on top of NGM	0% DMSO	Improved	daf-16, age-1, osr-1
									thermal stress survival	Induced with 37 °C							Improved	
									UV stress survival	Induced with UV 0.05 J/cm² for 20 sec							No effect	
									ROS stress survival	Induced with 5 mM paraquat							No effect	
									Hypertonic stress survival	Induced with 500 mM NaCl							No effect	
									Antioxidant capacity	Measurement of intracellular dichlorofluorescein fluorescence after treatment with paraquat							No effect	
Diospyros kaki	Ebenaceae	Fruits	Isopropanol - Water (75%)	Crude extract	Total phenols, total antioxidants, total protein, total carbohydrates	HPLC-MS²	Several constituents were tentatively identified and quantified with HPLC-MS² and standards (gallic acid, galloyl hexoside, vanillic acid hexoside, naringin, hesperidin, quercetin hexosides, kaempferol hexosides)	10, 100, 200 and 1000 µg/mL [158]	Autofluorescence	Filter (340-380/435–485 nm); microscopy + image processing	N2	L1	OP50	Solid agar	mixed with the NGM	DMSO	Improved	fat-7
Eucomnia ulmoides	*Eucommiaceae*	Bark	Butyl-methyl ether – methanol	Combined crude extracts of (1) butyl-methyl ether (MTBE) - methanol and (2) methanol	n.d.	HPLC-MS	n.d.	30 µg/ml [49]	Lifespan	Mean, minimum, median and maximum lifespan	N2	L4	OP50	Solid NGM agar	added to the NGM agar plates	0.05% DMSO	Improved	n.d.
									Locomotion	Wave initiation rate, activity index, brush stroke and body wave number							No effectd	
									Pharyngeal pumping	Pumping rate							No effect	
									Autofluorescence	TRITC filter (546/600 nm) microscopy and image processing							No effect	
									Thermal stress survival	Induced with 37° C							Improved	
					n.d.	HPLC-MS²	Several compounds tentatively identified with HPLC-MS² (e.g. 2,3,4,5,-tetrahydroxybenzoic acid, 2-C-Methyl-D-erythritol, chlorogenic acid, d-pinoresinol-4-O-glucoside)	15 and 30 µg/mL [60]	Thermal stress survival	Induced with 37°C	N2	L4	OP50	Solid NGM agar	Added to agar and bacteria	0.05% DMSO	Improved	n.d.
									ROS stress survival	Induced with 60 mM paraquat							Improved	
									ROS levels	Measurement of fluorescence from YFP-based hydrogen peroxide sensor HyPer under a ribosomal promoter	JV1						Improved	
		Male flowers	Hydroethanolic (80%)	Crude extract	Total phenols, total flavonoids, total terpenes, total antioxidants	HPLC-MS	Five compounds were identified and quantified by HPLC-MS and comparison to standards (aucubin, geniposide, geniposidic acid, asperuloside, chlorogenic acid)	25, 50, 100, 200 and 500 µg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	Improved	daf-16, mev-1
												A					Improved	
									Locomotion	Speed							Improved	
										Motility classes		L4					Improved	
										Muscle fiber organization	RW1596						Improved	
									Pharyngeal pumping	Pumping rate	N2						Improved	
									Autofluorescence	Filter (488/500-560) microscopy							Improved	

										and image processing								
									Thermal stress survival	Induced with 34°C							Improved	
									ROS stress survival	Induced with 200 mM paraquat							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
Capsicum annuum	Solanaceae	Fruits	Hydroethanolic	fraction enriched in capsaicinglycosides	Total antioxidants	HPLC-MS^2	Capsaicinglycosides and Dihydrocapsaicinglycoside tentatively idendified via MS^2	50 ug/ml [159]	Lifespan	Mean lifespan	N2	L4	heat-killed E. coli (OP50)	S-medium	Diluted in liquid	0.1% DMSO	No effect	
									Pharyngeal pumping	Pumping rate							No effect	
									ROS stress survival	Induced with 40 mM H_2O_2							Improved	
									Antioxidant capacity	Measurement of dichlorofluorescein fluorescence without or after incubation with juglone							Improved	
									thermal stress survival	Induced with 37 °C							Improved	
Lycium barbarum		Leaves	Hydroethanolic (70%)	Crude extract	Total flavonoids	HPLC-MS	Several compounds tentatively identified by HPLC-MS (e.g. chrysin, angelicain, neochlorogenic acid, quercetin-3-O-glucuronide, isochlorogenic acid A, rutin, taxifolin 7-rhamnoside, isochlorogenic acid B, daidzin, kaempferol, piperonone)	200 µg/mL [64]	Lifespan	Mean and maximum lifespan	N2	L4	OP50	Solid agar	added into the NGM	0.2% DMSO	Improved	skn-1, gcs-1
									Locomotion	Motility classes							Improved	
		Fruits	Aqueous	Crude extract of previously extracted material (butane)	Total flavonoids	HPLC-UV	Rutin was tentatively identified with HPLC-UV and references	2 mg/ml [160]	Proteotoxicity	Paralysis assay with constitutive amyloid beta expression in muscles	CL2006	A	OP50	Solid agar	added into the NGM	0% DMSO	No effect	ins-18, daf-16, let-60, sir-2.1, skn-1
				Flavonoid enriched fraction using (using AUKJ-1, BWKX-1 resins)	Total flavonoids	HPLC-UV	Rutin and myricetin were tentatively identified with HPLC-UV and references	2 mg/ml [160]	Proteotoxicity	Paralysis assay with constitutive amyloid beta expression in muscles	CL2006	A	OP50	Solid agar	added into the NGM	0% DMSO	Improved	ins-18, daf-16, let-60, sir-2.1, skn-1
			Aqueous acetone (80%)	Crude extract	Total phenols, total flavonoids	HPLC-UV	Several compounds tentatively identified with HPLC-UV (e.g. ascorbic acid, gallic acid, pelargonidin, chlorogenic acid)	20, 50, 100 mg/mL [161]	Lifespan	Mean lifespan	N2	L4	OP50	Solid agar	added into the bacteria	0% DMSO	Improved	daf-16, hsf-1, sir-2.1
									Locomotion	Motility classes							Improved	
									Pharyngeal pumping	Pumping rate							Detrimental	
									Autofluorescence	microscopy + Image processing (n.d. filter)							Improved	
									Thermal stress survival	Induced with 35°C							Improved	
									UV stress survival	Induced with UV-B 1200 J/m^2							Improved	
									ROS stress survival	Induced with 5 mM paraquart							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356	n.d.					Improved	
Lycium ruthenium		Fruits	Aqueous acetone (80%)	Crude extract	Total phenols, total flavonoids	HPLC-UV	Several compounds tentatively identified with HPLC-UV (e.g. pelargonidin, chlorogenic acid, delphinidin	2, 5, 10 mg/mL	Lifespan	Mean lifespan	N2	L4	OP50	Solid agar	added into the bacteria	0% DMSO	Improved	daf-16, hsf-1, sir-2.1
									Locomotion	Motility classes							Improved	
									Pharyngeal pumping	Pumping rate							Detrimental	
									Autofluorescence	Microscopy and image processing (n.d. filter)							Improved	
									Thermal stress survival	Induced with 35°C							Improved	

									UV stress survival	Induced with UV-B 1200 J/m^2							Improved	
									ROS stress survival	Induced with 5 mM paraquart							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
Cuscuta chinensis	Convolvulaceae	Seeds	Butyl-methyl ether – methanol	Combined crude extracts of (1) butyl-methyl ether (MTBE) - methanol and (2) methanol	n.d.	HPLC-MS	Several compounds tentatively identified with HPLC-MS (e.g. astragalin, quercetin glycosides)	30 µg/ml [49]	Lifespan	Mean, minimum, median and maximum lifespan	N2	L4	OP50	Solid NGM agar	added to the NGM agar plates	0.05% DMSO	Improved	n.d.
									Locomotion	Wave initiation rate, activity index, brush stroke and body wave number							Improved	
									Pharyngeal pumping	Pumping rate							Improved	
									Autofluorescence	TRITC filter (546/600 nm) microscopy and image processing							Improved	
									Thermal stress survival	Induced with 37◦C							Improved	
					n.d.	$HPLC-MS^2$	Several compounds tentatively identified with $HPLC-MS^2$ (e.g. 2,3,4,5,-tetrahydroxybenzoic acid, zingibroside R1, chlorogenic acid, d-pinoresinol-4-O-glucoside, 4-alpha-formyl-stigmasta7,24(241)-dien-3-beta-ol)	15 and 30 µg/mL [60]	Lifespan	Mean lifespan	N2	L4	OP50	Solid agar	Added to agar and bacteria	0.05%	Improved	n.d.
									Locomotion	Wave initiation rate, activity index, brush stroke and body wave number							Improved	
									Thermal stress survival	Induced with 37°C							Improved	
									ROS stress survival	Induced with 60 mM paraquat							Improved	
									ROS levels	Measurement of fluorescence from YFP-based hydrogen peroxide sensor HyPer under a ribosomal promoter	JV1						Improved	
Ipomoea batatas		Tuber	Hydroethanolic (80%)	Crude extract	Total antioxidants	HPLC-MS	Several compounds tentatively identified with HPLC-MS (cyanidin 3-(p-coumaroyl)-diglucoside-5-glucoside, cyanidin 3-caffeoyl sophoroside and delphinidin 3,5-diglucoside)	80 µg/mL [162]	Lifespan	Mean lifespan	N2	L4	OP50	Solid agar	Spotted onto plates	0% DMSO	Improved	sir-2.1, skn-1 and sod-3
									Autofluorescence	Filter (340/430 nm); microscopy + image processing							Improved	
									Thermal stress survival	Induced with 37°C							Improved	
									ROS stress survival	Induced with 1% H_2O_2							Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence; microscopy and image processing							Improved	
				Crude extract fermented for 24h with *Weissella confuse* NJLY1	Total antioxidants	HPLC-MS	Several compounds tentatively identified with HPLC-MS (e.g. chlorogenic acid, peonidin 3,5-diglucoside, peonidin 3-glucoside, feruloyl quinic acids, kaempferol-7-O-glucoside, trans-cinnamic acid, caffeic acid, 1,5-dicaffeoylquinic acid, cyanidin 3-glucoside and 7-hydroxycoumarin)	80 µg/mL [162]	Lifespan	Mean lifespan	N2	L4	OP50	Solid agar	Spotted onto plates	0% DMSO	Improved	daf-16, hsp-16.2, sir-2.1, skn-1 and sod-3
									Autofluorescence	Filter (340/430 nm); microscopy + image processing							Improved	
									Thermal stress survival	Induced with 37°C							Improved	
									ROS stress survival	Induced with 1% H_2O_2							Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence; microscopy and image processing							Improved	
Uncaria tomentosa	Rubiaceae	Bark	standardised extract AC-11					10 µg/mL [99]	Proteotoxicity	YFP tagged α-synuclein	NL5901	L1	OP50	Solid agar	Diluted in	n.d.	Improved	n.d.

										expression in muscles, Microscopy					OP50 before seeding onto NGM			
Coffea arabica		Semen (peels)	Aqueous	Crude extract	Total antioxidants	n.d.	Caffeine and chlorogenic acid were quantified	0.01, 0.1 and 1 mg/mL [25]	UV stress survival	Induced with daily UV-C treatment (45 s/day)	N2	A	OP50	Solid agar	n.d.	0% DMSO	Improved	n.d.
		Semen	Aqueous	Crude extract	n.d.	n.d.	n.d.	10% [4]	Thermal stress survival	Induced with 33°C	N2	L1	OP50	Solid agar	Diluted in NGM	0% DMSO	Improved	hsf-1
									Proteotoxicity	Paralysis assay with constitutive age -dependent YFP::polyglutamine aggregation in muscles	AM140						Improved	
										YFP tagged polyglutamine in muscles, quantification of fluorescence by microscopy and image processing							Improved	
			Hydromethanolic (30%, acidified pH=4.5)	Crude extract	Total hydroxycinnamic acid derivatives, total phenols, total antioxidants	NMR, HPLC-MS	18 compounds were tentatively identified by HPLC-MS; caffeine, trigonelline and chlorogenic acid were quantified with ^{1}H NMR	0.5, 1 and 1.5 mg/mL [26]	Lifespan	Mean and maximum lifespan	N2	A	OP50	Solid agar	n.d.	0% DMSO	Improved	n.d.
									ROS stress survival	Induced 10 mM paraquat							Improved	
Gardenia jasminoides		Fruits	Dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	HPLC-CAD/HPLC-UV	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	Improved	n.d.
Calycophyllum spruceanum		Bark	Aqueous	Crude extract	Total phenols, total antioxidants	HPLC-MS^2	5 compounds tentatively identified with HPLC-MS^2 (gardenoside, 5-hydroxymorin, cyanidin, taxifolin, and 5-hydroxy-6-methoxycoumarin-7-glucoside)	50, 100 and 200 µg/ml [163]	Lifespan	n.d.	BA17	A	OP50	S medium	Diluted in liquid	0% DMSO	Improved	daf-16
									Pharyngeal pumping	Pumping rate	N2			Solid agar	Supplemented to bacterial lawn		Improved	
									ROS stress survival	Induced with 80 µM juglone		L1		S medium	Diluted in liquid		Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence; microscopy and image processing							Improved	
Hedyotis diffusa		Herb	Hydroethanolic (80%)	Butanol fraction prepared as followed: Crude extract was suspended with distilled water, extracted three times with an equal volume of petroleum ether,	n.d.	HPLC-MS	Several compounds tentatively identified with HPLC-MS (e.g. desacetyl asperulosidic acid, asperulosidic acid, qurecetin-3-O-sophoroside, quercetin-3-O-sambubioside, E-6-O-p-coumaroyl scandoside	0.25, 0.5, and 1 mg/mL [68]	Lifespan	Mean lifespan	N2	L1	OP50	Solid agar	Poured into petri dishes before OP50 were seeded	0.2% DMSO	Improved	daf-2, daf-16
									Autofluorescence	Filter (385/420 nm); microscopy + image processing							Improved	
									Thermal stress survival	Induced with 37°C							Improved	
									ROS stress survival	Induced with 40 mM H_2O_2							Improved	

									Proteintoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	CL4176				n.d.		Improved	
Damnacanthus officinarum		Roots	Hydroethanolic (95%)	Crude extract	n.d.	n.d.	n.d.	800 and 1200 µg/ml [164]	Lifespan	Mean and median lifespan	HA759	A	OP50	S medium	Diluted in liquid	n.d. concentration of DMSO	Improved	
									Proteintoxicity	YFP tagged polyglutamine in ASH neurons; quantification of fluorescence by microscopy and image processing		L1					Improved	
				Petrolether fraction obtained by sequential liquid-liquid partition	n.d.	n.d.	n.d.	800 and 1200 µg/ml [164]	Proteintoxicity	YFP tagged polyglutamine in ASH neurons; quantification of fluorescence by microscopy and image processing	HA759	L1	OP50	S medium	Diluted in liquid	n.d. concentration of DMSO	Detrimental	
				Acetoacetate fraction obtained by sequential liquid-liquid partition	n.d.	n.d.	n.d.	800 and 1200 µg/ml [164]	Proteintoxicity	YFP tagged polyglutamine in ASH neurons; quantification of fluorescence by microscopy and image processing	HA759	L1	OP50	S medium	Diluted in liquid	n.d. concentration of DMSO	Improved	
				Butanol fraction obtained by sequential liquid-liquid partition	n.d.	n.d.	n.d.	800 and 1200 µg/ml [164]	Lifespan	Mean and median lifespan	HA759	A	OP50	S medium	Diluted in liquid	n.d. concentration of DMSO	Improved	
									Proteintoxicity	YFP tagged polyglutamine in ASH neurons; quantification of fluorescence by microscopy and image processing		L1					Improved	
				Water fraction obtained by sequential liquid-liquid partition	n.d.	n.d.	n.d.	800 and 1200 µg/ml [164]	Lifespan	Mean and median lifespan	HA759	A	OP50	S medium	Diluted in liquid	n.d. concentration of DMSO	Improved	
									Proteintoxicity	YFP tagged polyglutamine in ASH neurons; quantification of fluorescence by microscopy and image processing		L1					Improved	
		Leaves	Hydroethanolic (95%)	Crude extract	n.d.	n.d.	n.d.	800 and 1200 µg/ml [164]	Proteintoxicity	YFP tagged polyglutamine in ASH neurons; quantification of fluorescence by microscopy and image processing	HA759	L1	OP50	S medium	Diluted in liquid	n.d. concentration of DMSO	Detrimental	
				Petrolether fraction obtained by sequential liquid-liquid partition	n.d.	n.d.	n.d.	800 and 1200 µg/ml [164]	Proteintoxicity	YFP tagged polyglutamine in ASH neurons; quantification of fluorescence by microscopy and image processing	HA759	L1	OP50	S medium	Diluted in liquid	n.d. concentration of DMSO	Detrimental	
				Acetoacetate fraction obtained by sequential liquid-	n.d.	n.d.	n.d.	800 and 1200 µg/ml [164]	Proteintoxicity	YFP tagged polyglutamine in ASH neurons;	HA759	L1	OP50	S medium	Diluted in liquid	n.d. concentration	Detrimental	

				liquid partition						quantification of fluorescence by microscopy and image processing						of DMSO		
				Butanol fraction obtained by sequential liquid-liquid partition	n.d.	n.d.	n.d.	800 and 1200 µg/ml [164]	Lifespan	Mean and median lifespan	HA759	A	OP50	S medium	Diluted in liquid	n.d. concentration of DMSO	Improved	
									Proteintoxicity	YFP tagged polyglutamine in ASH neurons; quantification of fluorescence by microscopy and image processing	HA759	L1	OP50	S medium	Diluted in liquid	n.d. concentration of DMSO	Improved	
				Water fraction obtained by sequential liquid-liquid partition	n.d.	n.d.	n.d.	800 and 1200 µg/ml [164]	Proteintoxicity	YFP tagged polyglutamine in ASH neurons; quantification of fluorescence by microscopy and image processing	HA759	L1	OP50	S medium	Diluted in liquid	n.d. concentration of DMSO	Improved	
Cynanchum stauntonii	Apocynaceae	Rhizomes	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	Improved	n.d.
Cynanchum paniculatum		Roots	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	Improved	n.d.
Andrographis paniculata	Acanthaceae	Herb	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	No effect	n.d.
Phlogacanthus thyrsiflorus		Leaves	Aqueous	Crude extract	Total phenols, total flavonoids	n.d.	n.d.	1 mg/ml [165]	ROS stress survival	Induced with 10 mm tert-butyl hydroperoxide	N2	L3	OP50	S medium	Diluted in liquid	n.d.	Improved	sod
			Methanol	Crude extract	Total phenols, total flavonoids	GC-MS	Several compounds tentatively identified by MS^2	1 mg/ml [165]	ROS stress survival	Induced with 10 mm tert-butyl hydroperoxide	N2	L3	OP50	S medium	Diluted in liquid	n.d.	Improved	sod
Scutellaria barbata	Lamiaceae	Herb	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/mL [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	No effect	n.d.
Salvia rosmarinus		Flowers	Ethanol	Crude Soxhlet extract	Total phenols	HPLC-MS^2	14 compounds identified and quantified using HPLC-MS^2 and reference compounds (cis 4-O-caffeoylquinic acid, trans 4-O-caffeoylquinic acid, medioresinol, caffeic acid, luteolin-O-di-hexoside, luteolin-7-O-glucuronide,	50–500 µg/mL [166]	Lifespan	Median lifespan	SS104	A	OP50	Solid agar	n.d.	n.d.	No effect	n.d.
									ROS stress survival	Induced with 150 µM juglone	N2	L1	OP50	Solid agar	n.d.	n.d.	Improved	

							quercetin-3-O-glucoside, isorhamnetin-3-O-rutinoside, isorhamnetin-3-O-glucosidec cis rosmarinic acid, trans rosmarinic acid, luteolin-O-glucuronide, luteolin-3'-acetyl-O-glucuronide, luteolin-3'-acetyl-O-glucuronide D)											
Sideritis scardica		Herb	Aqueous	Crude extract	n.d.	n.d.	n.d.	5 and 50 µg/mL [167]	Lifespan	Mean lifespan	N2	L4	OP50	Peptone free solid NGM agar	n.d.	0% DMSO	Improved	n.d.
									Thermal stress survival	Induced with 35°C		L1					Improved	
									Nuclear translocation	DAF-16::GFP translocation upon heat shock	TJ356						Detimental	
Ligustrum lucidum	Oleaceae	Fruits	Butyl-methyl ether – methanol	Combined crude extracts of (1) butyl-methyl ether (MTBE) - methanol and (2) methanol	n.d.	HPLC-MS	n.d.	30 µg/ml [49]	Thermal stress survival	Induced with 37°C	N2	L4	OP50	Solid NGM agar	added to the NGM agar plates	0.05% DMSO	Improved	n.d.
Olea europaea		Fruits (pulp)	Aqueous	Acquirable special extract titrated to 12% polyphenolic	total phenolic content	n.d.	some ingredients were quantified (method n.d.) (hydroxytyrosol, oleuropein, tyrosol oleuropein aglycone and gallic acid)	250 ug/ml [168]	Lifespan elongation	Mean, median and maximum lifespan	N2	L4	OP50	Solid agar	added to the bacteria and agar	0% DMSO	Improved	
									Locomotion	Wave initiation rate, activity index, brush stroke and body wave number	N2	L4	OP50	Solid agar	added to the bacteria and agar	0% DMSO	Improved	
									Thermal stress survival	Induced with 37 ◦C							Improved	
									Autofluorescence	Filter (545/610 nm) Microscopy + Image Processing							Improved	
									Proteintoxicity	YFP tagged α-synuclein expression in muscles, Microscopy & image processing	OW13						Improved	
									Neurodegeneration	6-OHDA induced neurodegeneration monitored by GFP tagged dopamine transporter expression	UA44						Improved	
		leaves	methanol	Crude extract	Total phenolic, total flavonoid, total protein, total sugars reported	n.d.	n.d.	0.4 mg/ml [169]	ROS levels	Measurment of intracellular dichlorofluorescein fluorescence Plate reader	N2	L4	OP50	Solid agar	Diluted in agar	1% DMSO	Improved	daf-16
									Thermal stress survival	Induced with 37 ◦C							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356	L1					Improved	
Jasminum sambac		Flowers	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid NGM agar	Added onto the surfaces of the NGM	n.d.	Detrimental	n.d.
Osmanthus fragrans		Flowers (corolla)	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid NGM agar	Added onto the surfac	n.d.	No effect	n.d.

															es of the NGM			
Euphrasia officinalis	Orobanchaceae	Herb	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	Improved	n.d.
Camellia tenuifolia	Theaceae	Seed pomace	Aqueous	Crude extract	n.d.	n.d.	n.d.	1 and 10 µg/mL [65]	ROS stress survival	Induced with 250 µM juglone	N2	L1	OP50	S Medium	Diluted in liquid	n.d.	Improved	
			Ethanol	Crude extract	n.d.	n.d.	n.d.	1 and 10 µg/mL [65]	ROS stress survival	Induced with 250 µM juglone	N2	L1	OP50	S Medium	Diluted in liquid	n.d.	Improved	
			Methanol	Crude extract	Total phenols, total antioxidants	HPLC, NMR, MS	Bioactivity-guided fractionation	1 and 10 µg/mL [65]	ROS stress survival	Induced with 250 µM juglone	N2	L1	OP50	S Medium	Diluted in liquid	n.d.	Improved	
				Fraction 1 of crude methanolic extract obtained by Diaion HP-20 LC with water/MeOH gradient	Total phenols, total antioxidants	n.d.	n.d.	1 and 10 µg/mL [65]	ROS stress survival	Induced with 250 µM juglone	N2	L1	OP50	S Medium	Diluted in liquid	n.d.	Improved	
				fraction 2 of crude methanolic extract obtained by Diaion HP-20 LC with water/MeOH gradient	Total phenols, total antioxidants	n.d.	n.d.	1 and 10 µg/mL [65]	ROS stress survival	Induced with 250 µM juglone	N2	L1	OP50	S Medium	Diluted in liquid	n.d.	No effect	
				Fraction 3 of crude methanolic extract obtained by Diaion HP-20 LC with water/MeOH gradient	Total phenols, total antioxidants	HPLC, NMR, MS	Bioactivity-guided fractionation led to the isolation of kaempferol 3-O-(2”-glucopyranosyl)-rutinoside and kaempferol 3-O-(2”-xylopyranosyl)-rutinoside characterised by HPLC-MS and NMR	1 and 10 µg/mL [65]	Lifespan	Median lifespan	N2	L1	UV-inactivated OP50	Solid agar	n.d.	n.d.	Improved	
									ROS stress survival	Induced with 250 µM juglone			OP50	S Medium	Diluted in liquid	n.d.	Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence							Improved	
									Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	CL4176		OP50	Solid agar	n.d.	n.d.	Improved	
				fraction 4 of crude methanolic extract obtained by Diaion HP-20 LC with water/MeOH gradient	Total phenols, total antioxidants	n.d.	n.d.	1 and 10 µg/mL [65]	ROS stress survival	Induced with 250 µM juglone	N2	L1	OP50	S Medium	Diluted in liquid	n.d.	No effect	
				fraction 5 of crude methanolic extract obtained by Diaion HP-20 LC with water/MeOH gradient	Total phenols, total antioxidants	n.d.	n.d.	1 and 10 µg/mL [65]	ROS stress survival	Induced with 250 µM juglone	N2	L1	OP50	S Medium	Diluted in liquid	n.d.	No effect	
				fraction 6 of crude methanolic extract obtained by Diaion HP-20 LC with water/MeOH gradient	Total phenols, total antioxidants	n.d.	n.d.	1 and 10 µg/mL [65]	ROS stress survival	Induced with 250 µM juglone	N2	L1	OP50	S Medium	Diluted in liquid	n.d.	No effect	
			Ethylacetat	Crude extract	n.d.	n.d.	n.d.	1 and 10 µg/mL[65]	ROS stress survival	Induced with 250 µM juglone	N2	L1	OP50	S Medium	Diluted in liquid	n.d.	No effect	
			Hexane	Crude extract	n.d.	n.d.	n.d.	1 and 10 µg/mL [65]	ROS stress survival	Induced with 250 µM juglone	N2	L1	OP50	S Medium	Diluted in	n.d.	No effect	

															liquid			
Camellia sinensis		Leaves	Hexane	Crude extract	n.d.	n.d.	n.d.	10 and 100 µg/mL [43]	Lifespan	Mean and maximum lifespan	CL4176	L1	OP50	Solid agar	Diluted in OP50	0.1% DMSO	No effect	n.d.
									Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles							Improved	
				Volatile fraction of crude extract	n.d.	n.d.	n.d.	2 µg/mL [43]	Lifespan	Mean and maximum lifespan	CL4176	L1	OP50	Solid agar	Diluted in OP50	0.1% DMSO	No effect	n.d.
									Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles							No effect	
				Non-volatile fraction of crude extract	n.d.	n.d.	n.d.	10 and 100 µg/mL [43]	Lifespan	Mean and maximum lifespan	CL4176	L1	OP50	Solid agar	Diluted in OP50	0.1% DMSO	Improved	n.d.
									Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles							Improved	
			Aqueous	Crude extract (black tea)	n.d.	n.d.	n.d.	50, 100 and 200 mg/ml [170]	Lifespan		N2	A	UV-inactivated OP50	Solid agar	Diluted in OP50	0% DMSO	No effect	sir-2.1, sek-1
									Thermal stress survival	Induced with 35 °C							Improved	
									UV stress survival	Induced with UV 2000 J/m^2							Improved	
									Hypertonic stress survival	Induced with 500 mM NaCl							Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence							Improved	
				Crude extract (black tea)	n.d.	n.d.	n.d.	50, 100 and 200 mg/ml [171]	Hypertonic stress survival	Induced with 500 mM NaCl	N2	L4	UV-inactivated OP50	Solid agar	Diluted in OP50	0% DMSO	Improved	sek-1
											AM140						Improved	
										Induced with 500 mM Na_2SO_4	N2						Improved	
										Induced with 500 mM LiCl							Improved	
										Induced with 500 mM KCl							Improved	
			Aqueous	Crude extract (green tea)	n.d.	n.d.	n.d.	50, 100 and 200 mg/ml [171]	Hypertonic stress survival	Induced with 500 mM NaCl	N2	L4	UV-inactivated OP50	Solid agar	Diluted in OP50	0% DMSO	No effect	n.d.
			Aqueous	Crude extract (green tea)	Total antioxidants	HPLC-MS	Several constituents tentatively identified by LC-MS (catechin, epicatechin, epicatechin gallate, gallocatechin, epigallocatechin and epigallocatechin gallate)	100 µg/mL [172]	ROS stress survival	Induced with 80 µM juglone	N2	L1	OP50	liquid S-medium	Diluted in liquid	0% DMSO	Improved	n.d.
			n.d.	Acquirable special extract enriched with catechins	n.d.	n.d.	Several constituents quantified using RP-HPLC-UV (Epicgallocatechin, catechin, epicatechin, epigallocatechin gallate, epicatechin gallate, gallocatechin, gallocatechin gallate, caffeine, theobromine theogallin, gallic acid)	0.01% [31]	Thermal/osmotic stress survival	Induced with 37 °C and 10 mM glucose	N2	A	OP50	M9 with 1% Tween 20	Diluted in liquid	0% DMSO	Improved	sir-2.1
			Aqueous	Crude extract (oolong tea)	n.d.	HPLC-UV	Several constituents were tentatively identified by HPLC-UV and comparison to reference compounds	0, 50, 100, 200 µg/ml [173]	Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta	CL4176	L1	OP50	S medium	Diluted in liquid	0% DMSO	Improved	n.d.

							(gallic acid, different catechins, and caffeine)			expression in muscles								
										YFP tagged α-synuclein expression in muscles, microscopy	NL5901						Improved	
		Flowers	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	Detrimental	n.d.
Panax notoginseng	Araliaceae	Roots	Ethanol	Crude extract	n.d.	HPLC-UV	Notoginsenoside R1, ginsenoside Rg1, and ginsenoside Rb1 were tentatively identified with HPLC-UV and reference compounds	0.8 and 1.6 mg/mL [174]	Lifespan	Mean lifespan	N2	A	OP50	Solid agar	n.d.	n.d.	Improved	daf-2 and daf-16
									Autofluorescence	Filter (385/420 nm); microscopy and image processing							Improved	
									Thermal stress survival	Induced with 35°C							Improved	
									ROS stress survival	Induced with 1.4 mM H_2O_2							Improved	
									Antioxidant capacity	Measurement of dichlorofluorescein fluorescence after incubation with H_2O_2							Improved	
Panax ginseng			n.d.	n.d.	n.d.	HPLC-MS	Several ginsenosides were identified and quantified using HPLC-MS and reference compounds	85 µg/mL [175]	Thermal stress survival	Induced with 37°C	N2	A	Carbenicillin inactivated HT115	Liquid NGM	Diluted in liquid	0% DMSO	Improved	daf-16
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
			Aqueous	Ginsenoside enriched fraction prepared by several rounds of SPE	n.d.	HPLC-UV	Several ginsenosides were identified and quantified using HPLC-UV and reference compounds	0.1, 0.2 and 0.4 mg/ml [96]	Lifespan	n.d.	N2	L1	UV-inactivated OP50	Solid agar	added to the NGM before pouring to the plates	0.04% DMSO	No effect	sir2.1, skn-1, daf-16
												L4					No effect	
												A					Improved	
									Locomotion	body bending rate							Improved	
										muscle fiber organization	RW1596						Improved	
									Autofluorescence	GFP filter; microscopy + image processing	N2							
									ROS stress survival	Induced with 7 mM tert-butylhydroperoxid							Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence; plate reader							Improved	
									Antioxidant capacity	Measurement of dichlorofluorescein fluorescence after incubation with tert-butylhydroperoxid							Improved	
Eleutherococcus sessiliflorus		Roots	Aqueous	Crude extracts	n.d.	n.d.	n.d.	0, 50, 100, 500, and 1000 µg/mL [176]	Lifespan	Mean and maximum lifespan	N2	L4	OP50	Solid agar	n.d.	0% DMSO	Improved	n.d.
									Thermal stress survival	Induced with 35 °C							Improved	
									ROS stress survival	Induced with 20 mM paraquat							Improved	
									UV stress survival	Induced with UV 20 J/cm2 for 1 min							Improved	
									Proteotoxiciyy	Paralysis assay with temperature-dependent amyloid beta expression in	CL4176	L1					Improved	

										muscles								
Ilex paraguariensis	Aquifoliaceae	Leaves	Aqueous	Crude extract	n.d.	HPLC-UV	Several constituents were identified and quantified by HPLC-UV by comparison with standards (Gallic acid, catechin, chlorogenic acid, caffeic acid, caffeine theobromine, epigallocatechin, rutin, quercetin, kaempferol)	1 mg/ml [177]	ROS stress survival	Induced with 100 µM juglone	N2	L1	OP50	Solid agar	Spread together with OP50 to NGM plates	0% DMSO	Improved	nhr-49
			Aqueous	Crude extract	n.d.	n.d.	n.d.	n.d. [178]	Lifespan	Mean lifespan	N2	L1	n.d.	n.d. liquid	Diluted in liquid	n.d.	Improved	daf-16
									ROS stress survival	Induced with 1 mM paraquat							Improved	
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356	n.d.					Improved	
Calendula officinalis	Asteraceae	Flowers	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and median lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	No effect	n.d.
			dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material; tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	No effect	n.d.
Baccharis trimera		Herb	Hydroethanolic (70%)	Crude extract	Total phenols, total antioxidants	n.d.	n.d.	0.5, 5, and 50 mg/mL [179]	Lifespan	Mean, maximum and median lifespan	BA17	L1	OP50	Solid agar	mixed with OP50 before spreading to NGM	0% DMSO	No effect	daf-16, skn-1, hsp-4
									ROS stress survival	Induced with 7.5 mM tert-butyl hydroperoxide	N2						Improved	
													Kanamycin treated OP50				Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence			OP50				Improved	
									Antioxidant capacity	Measurement of dichlorofluorescein fluorescence without or after incubation with tert-butyl hydroperoxide							Improved	
									Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	CL4176						Improved	
Matricaria recutita		Flowers	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and median lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	No effect	n.d.
Chrysanthemum morifolium		Flowers	Hydroethanolic (80%)	Crude extract	Total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and median lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfac	n.d.	No effect	n.d.

															es of the NGM			
Erigeron breviscapus		Flowers (tubular flowers)	Hydroethanolic (80%)	Crude extract	Total phenols, total flavonoids, total terpenes, total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and median lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	Improved	n.d.
Carthamus tinctorius		Flowers (tubular flowers)	Hydroethanolic (80%)	Crude extract	Total phenols, total flavonoids, total terpenes, total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and median lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	Improved	n.d.
Tagetes erecta		Flowers	Hydroethanolic (80%)	Crude extract	Total phenols, total flavonoids, total terpenes, total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and median lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	Improved	n.d.
		Flowers (yellow cultivar ray flowers)	Ethanol	Crude extract	Total phenols, total antioxidants	HPLC-MS²	Nine compounds were tentatively identified HPLC-MS² (e.g. digallic acid, laricitrin-di-hexosides, myricetin-hexoside, laricitrin-galloyl-hexoside, laricitrin-hexosides, laricitrin)	50, 75, 125, and 250 µg/mL [180]	Lifespan	Mean lifespan	N2	A	OP50	S medium	Diluted in liquid	0% DMSO	Improved	n.d.
									ROS stress survival	Induced with 150 µM juglone		L1		Solid agar	n.d.		Improved	
									Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	CL4176						Improved	
		Flowers (*orange cultivar* ray flowers)	Ethanol	Crude extract	Total phenols, total antioxidants	HPLC-MS²	Nine compounds were tentatively identified HPLC-MS² (e.g. digallic acid, laricitrin-di-hexosides, myricetin-hexoside, laricitrin-galloyl-hexoside, laricitrin-hexosides, laricitrin)	50, 75, 125, and 250 µg/mL [180]	Lifespan	Mean lifespan	N2	A	OP50	S medium	Diluted in liquid	0% DMSO	Improved	n.d.
									ROS stress survival	Induced with 150 µM juglone		L1		Solid agar	n.d.		Improved	
									Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	CL4176						Improved	
Artemisia selengensis		Leaves	Hydroethanolic (50%)	Fraction obtained as followed: Consecutive liquid-liquid partition of crude extraction solvent with petrol ether and ethyl acetate; ethyl acetate fraction was loaded onto HP20 resin column and washed with water and 50% ethanol. The tested fraction was eluted with ethanol	n.d.	HPLC-UV	Major constituents were quantified with HPLC-UV and reference compounds (chlorogenic acid, 1,4-dicaffeoylquinic acid, 3,4-dicaffeoylquinic acid, 1,5-dicaffeoylquinic acid, 3,5-dicaffeoylquinic acid, 4,5-dicaffeoylquinic acid)	60, 240 and 360 µg/mL [181]	Lifespan	Mean lifespan	N2	L4	Heat-inactivated OP50	S medium	Diluted in liquid	0.6% DMSO	Improved	*daf-16, skn-1, daf-2, age-1, sgk-1, akt-1*
									Locomotion	Number of body bends							Improved	
									Pharyngeal pumping	Pumping rate							Improved	
									Autofluorescence	Filter (485/528) microscopy + image processing							Improved	
									thermal stress survival	Induced with 37 °C							Improved	
									ROS stress survival	Induced with 1 mM H_2O_2							Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence with plate reader							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						Improved	
Cirsium japonicum		Aerial parts	Hydroethanolic (70%)	Crude extract	Total antioxidants	HPLC-MS	3 compounds identified with HPLC-MS and references (chlorogenic acid, linarin, pectolinarin)	25, 50 and 100 µg/mL [182]	Lifespan	Medium and maximum lifespan	N2	L4	OP50	Solid agar	n.d.	n.d.	No effect	n.d.
									Pharyngeal pumping	Pumping rate		L1					Improved	

									ROS stress survival	Induced with 3 mM paraquart							Improved	
									ROS levels	Measurment of intracellular dichlorofluorescein fluorescence; Plate reader							Improved	
Silybum marianum		Seeds	n.d.	Flavanolignane complex (silymarin)				10 and 50 µM [67]	Lifespan	Mean lifespan	N2	Adult	UV-irradiated OP50	Solid agar	Added onto bacterial lawn	DMSO (1%)	Improved	
Peucedanum ostruthium	Apiaceae	Roots and rhizomes	Dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	Detrimental	n.d.
Vicatia thibetica		Roots	Aqueous	Crude extract	n.d.	n.d.	n.d.	200 µg/mL or 400µg/mL [183]	Lifespan	Mean lifespan	N2	L4	OP50	Solid agar	n.d.	n.d.	Improved	*daf-16, hsf-1*
									Locomotion	Number of body bends							Improved	
									Pharyngeal pumping	Pumping rate							Improved	
Lonicera japonica	Caprifoliaceae	Flowers	Hydroethanolic (80%)	Crude extract	Total phenols, total flavonoids, total terpenes, total antioxidants	n.d.	n.d.	50 mg/mL [24]	Lifespan	Mean and Median Lifespan	N2	L4	UV inactivated OP50	Solid agar	Added onto the surfaces of the NGM	n.d.	Improved	n.d.
		n.d.	Hydroethanolic (75%)	Crude extract of degreased material (petrolether and ethylacetat)	n.d.	HPLC-UV	Chlorogenic acid, 1,5-dicaffeoylquinic acid and 1,3-dicaffeoylquinic acid were quantified with HPLC-UV and standards	500 µg/mL [27]	Lifespan	Mean lifespan	N2	A	OP50	S medium	Diluted in liquid	n.d. concentration of DMSO	Improved	hsf-1
									Locomotion	Number of body bends							Improved	
									Pharyngeal pumping	Pumping rate							Improved	
									thermal stress survival	Induced with 37°C							Improved	
									ROS stress survival	Induced with 200 mM paraquat							Improved	
									ROS levels	Measurement of intracellular dichlorofluorescein fluorescence							Improved	
									Nuclear translocation	DAF-16::GFP	TJ356						No effect	
									Proteotoxicity	Paralysis assay with temperature-dependent amyloid beta expression in muscles	CL4176	n.d.		Solid agar	Pipetted onto NGM		Improved	
Valeriana officinalis		Roots	dichloromethane – methanol	Lead-like enhanced extract: Combined dichloromethane and methanol extracts of degreased (hexane) material, tannin depleted by polyamide SPE	n.d.	n.d.	n.d.	25 and 100 µg/ml [2]	Lifespan	Death Time 50 (DT50)	N2	L4	OP50	S medium	Diluted in liquid	1% DMSO	No effect	n.d.

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