

Table S1 Primers used in this study

PCR	Direction	Primer ID	Sequence	Restriction sites
<i>trxr-1</i> genotyping (nested PCR)	FWD 1st	Q223 <i>jh143</i> F1	TCCAACCGAACCTGCAAGTG	
	RVS 1st	Q224 <i>jh143</i> B1	CAATAGCGCGGTAATTCAAAGC	
	FWD 2nd	Q225 <i>jh143</i> F2	TTGTCACATCTTGTATTTCCGTCCAG	
	RVS 2nd	Q226 <i>jh143</i> B2	TTTAGTGATATTTGGGCATTCAGGAG	
	Inner	Q227 <i>jh143</i> B3	GACATTCACACAAGTTCCTCCTAATCC	
<i>trxr-2</i> genotyping (nested PCR)	FWD 1st	Q640 <i>trxr-2</i> F1	CCA TTT TTC CTA GTT TTC ACC	
	RVS 1st	Q641 <i>trxr-2</i> B1	AGG AAT ATT TGG ATA TTT GGG	
	FWD 2nd	Q642 <i>trxr-2</i> F2	TGT ACC ATT TTG TGT TGAAAA CG	
	RVS 2nd	Q643 <i>trxr-2</i> B2	GAT GAA ATT TTT TAA TTT TCC GT	
	Inner	Q644 <i>trxr-2</i> F3	AGC ACT AAA TTC AAA ATT CCA GC	
<i>ptrxr-1::gfp</i> (nested PCR)	FWD 1st	Q272 <i>trxr-1::gfp</i> F1	CTGGAATCTGTGGGCGTGGATC	
	RVS 1st	Q273 <i>trxr-1::gfp</i> B1	GAATTCCTGGCGCATCAACGAG	
	FWD 2nd	Q274 <i>trxr-1::gfp</i> F2	ATCGACTGCAGCCTTGAACCAGAAACAAG	PstI
	RVS 2nd	Q36	GTGAGGGATCCCATGCCATCTAAAAAATT C	BamHI
<i>ptrxr-1::trxr-1::gfp</i> (nested PCR)	FWD 1st	Q272 <i>trxr-1::gfp</i> F1	CTGGAATCTGTGGGCGTGGATC	
	RVS 1st	Q529 <i>trxr-1::gfp</i> res B1	GCCAAAGGTCGTCACAAAGCTG	
	FWD 2nd	Q274 <i>trxr-1::gfp</i> F2	ATCGACTGCAGCCTTGAACCAGAAACAAG	PstI
	RVS 2nd	Q530 <i>trxr-1::gfp</i> res B2	TAGGATCCGCAACCAGAAGCTTGTAAATTC	BamHI
<i>ptrxr-1::trxr-1::gfp 2</i>	FWD	Q274 <i>trxr-1::gfp</i> F2	ATCGACTGCAGCCTTGAACCAGAAACAAG	PstI
	RVS	Q275 <i>trxr-1::gfp</i> B2	TCGCGGATCCTCCCATAGAGGGTATCG	BamHI
<i>ptrxr-1::trxr-1</i> sec rescue	FWD	Q272 <i>trxr-1::gfp</i> F1	CTGGAATCTGTGGGCGTGGATC	
	RVS	Q1089 TR1R1	ACAATAAAAGGTAATGACCAAAC	
<i>ptrxr-1::trxr-1</i> cys rescue	FWD	Q274 <i>trxr-1::gfp</i> F2	ATCGACTGCAGCCTTGAACCAGAAACAAG	PstI
	RVS	Q530 <i>trxr-1::gfp</i> res B2	TAGGATCCGCAACCAGAAGCTTGTAAATTC	BamHI
<i>pIN::gfp</i>	FWD	Q902 <i>trxr-2 gfp</i> F1	TGAAAAGTTCGACCTACAACTTGATTC	Sall
	RVS	Q903 <i>trxr-2 gfp</i> R1	TGGAGGATCCCATCAGAAAATTGATCT	BamHI
<i>pIN::trxr-2::gfp</i>	FWD	Q902 <i>trxr-2 gfp</i> F1	TGAAAAGTTCGACCTACAACTTGATTC	Sall
	RVS	Q904 <i>trxr-2 gfp</i> R2	TTTTGGATCCTCCACAGCATCCCTGAG	BamHI
<i>pEX::gfp</i>	FWD	Q975 <i>trxr-2-ex-F</i>	CTCAAGCTTGACGACATTTTTATC	HindIII
	RVS	Q976 <i>trxr-2-ex-R</i>	ACCGTCGACAGTTGATTCTGT	Sall
<i>pEX::trxr-2::gfp</i>	promoter FWD	Q975 <i>trxr-2-ex-F</i>	CTCAAGCTTGACGACATTTTTATC	HindIII
	promoter RVS	Q976 <i>trxr-2-ex-R</i>	ACCGTCGACAGTTGATTCTGT	Sall
	coding FWD	Q977 <i>trxr-2-cod-F</i>	AATGTCGACATGCTTCTATCCACTTTC	Sall
	coding RVS	Q902 <i>trxr-2 gfp</i> R2	TTTTGGATCCTCCACAGCATCCCTGAG	BamHI
<i>trxr-1</i> q-PCR	FWD	Q1021 <i>trxr-1</i> q-F1	GGAACACCTGAATTGACTCCAG	
	RVS	Q1022 <i>trxr-1</i> q-R1	CTCCGATAGTCCACAGCAAC	
<i>trxr-2</i> q-PCR	FWD	Q1025 <i>trxr-2</i> q-F1	GCCGTTGGAGATATTGTTTCAGG	
	RVS	Q1026 <i>trxr-2</i> q-R1	GAGGCGTGAATACTGTAGTGG	

Table S2. Life span analysis of independent experiments.

Genotype	Experiment #	Mean life span \pm SE (n)	
		20°C	25°C
<i>N2</i>	A	17.65 \pm 0.43(78)	13.03 \pm 0.22(87)
	B	20.60 \pm 0.54(75)	12.69 \pm 0.19(75)
	C		11.16 \pm 0.21(67)
<i>trxr-1(jh143)</i>	A	16.47 \pm 0.43(85)	12.65 \pm 0.19(81)
	B	19.93 \pm 0.50(85)	12.92 \pm 0.19(79)
	C		11.20 \pm 0.19(65)
<i>trxr-2(tm2047)</i>	A	19.26 \pm 0.48(78)	11.56 \pm 0.25(87)*
	B	21.26(68)	11.27 \pm 0.18(84)*
	C		10.51 \pm 0.16(74)*
<i>trxr-2(tm2047); trxr-1(jh143)</i>	A	17.17 \pm 0.39(82)	12.27 \pm 0.18(79)*
	B	22.67(76)	11.61 \pm 0.17(77)*
	C		10.76 \pm 0.17(90)

*p<0.01

Each experiment was done independently starting with 100 worms