

Table 1. Primers used for quantitative PCR analysis.

Gene	Gene ID	Forward Primer (5'-3')	Reverse Primer (5'-3')	Annealing Temperature (°C)	Fragment size (bp)	Primer Efficiency (%)
<i>actin-1</i>	179535	TCGGTATGGGACAGAAGGAC	CATCCCAGTTGGTGACGATA	59	108	94.64
<i>sod-3</i>	181748	GGCTAAGGATGGTGGAGAAC	ACAGGTGGCGATCTTCAAG	59	175	90.24
<i>gst-4</i>	177886	ATGCTCGTGCTCTTGCTGAG	GACTGACCGAATTGTTCTCCAT	59	163	89.75
<i>daf-16</i>	172981	TCAAGCCAATGCCACTACC	TGGAAGAGCCGATGAAGAAG	59	161	90.36
<i>skn-1</i>	177343	GACGTCAATTTATGGAGTGTCG	GAAGATGTTTTGTCGTGATCCG	59	137	92.56
<i>sek-1</i>	181043	ATGCTCGGTGAGTATTGG	TCATTGATAAACCGAGCC	59	165	93.96
<i>age-1</i>	174762	CCTGAACCGACTGCCAATC	GTGCTTGACGAGATATGTGTATTG	59	144	91.97

Highlights

- Orange extracts significantly promote longevity and stress resistance of *C. elegans*;
- Orange extracts promote the healthspan by improving motility, decreasing lipofuscin and intracellular ROS levels without damaging fertility in *C. elegans*;
- The antioxidant enzyme activities of SOD and CAT are enhanced, while the MDA contents are diminished in *C. elegans*;
- Insulin/ insulin-like growth factor signaling and mitogen-activated protein kinase;
- pathway pathways partly involve in the longevity mechanism of orange extracts.