

Supporting Information

Graphene Oxide Antagonize Toxic Response to Arsenic via Activation of Protective Autophagy and Suppression of Arsenic- Binding Protein LEC-1 in *Caenorhabditis elegans*

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SUPPLEMENTARY FIGURE AND FIGURE LEGEND

Supplementary Table 1. PCR primers for qRT-PCR

Primer	Sequence (5'-3')
<i>bec-1</i>	CAACTGCAAGAATCGACGAA CCCATCTGATGCTCCAGTTT
<i>lgg-1</i>	TGACATTTTCAGACGATGACAAC TGTTATCGAATCGGTCAATCTCT
<i>unc-51</i>	CAGTCTAGATCTGTGATTTGAAGCCCCAAAAC CTATGAGGTACCTGCTTAACCGGACTGGATTC
<i>atg-7</i>	CATCTCTCGGAGCCGATCAC GCAAGAACGTTGCGAACCAT
<i>lec-1</i>	TCCTCAATTCCTTCGCTGGT GCGGTCTTCGAGTGAAGGTT
<i>act-1</i>	ACGAGGTTGCCGCTCTTGTTG CATACCGACCATGACTCCTTGATGAC

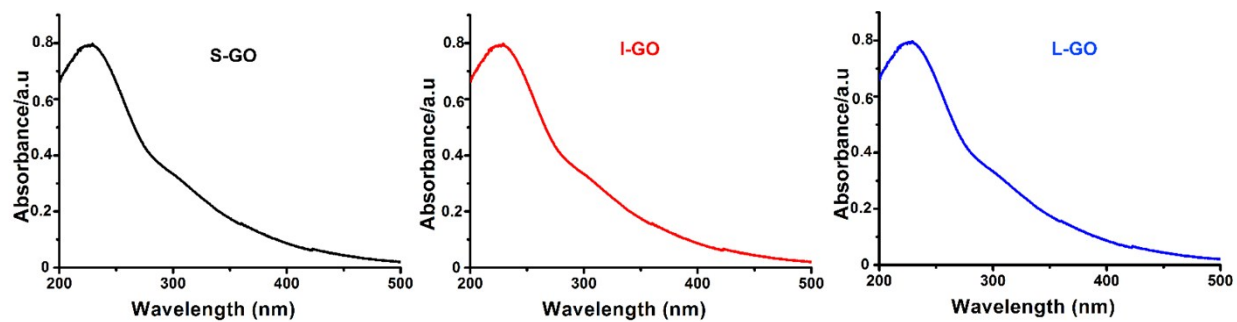


Fig. S1 UV-vis absorption spectrum of S-GO, I-GO and L-GO in Milli-Q

water at 10 $\mu\text{g/mL}$.

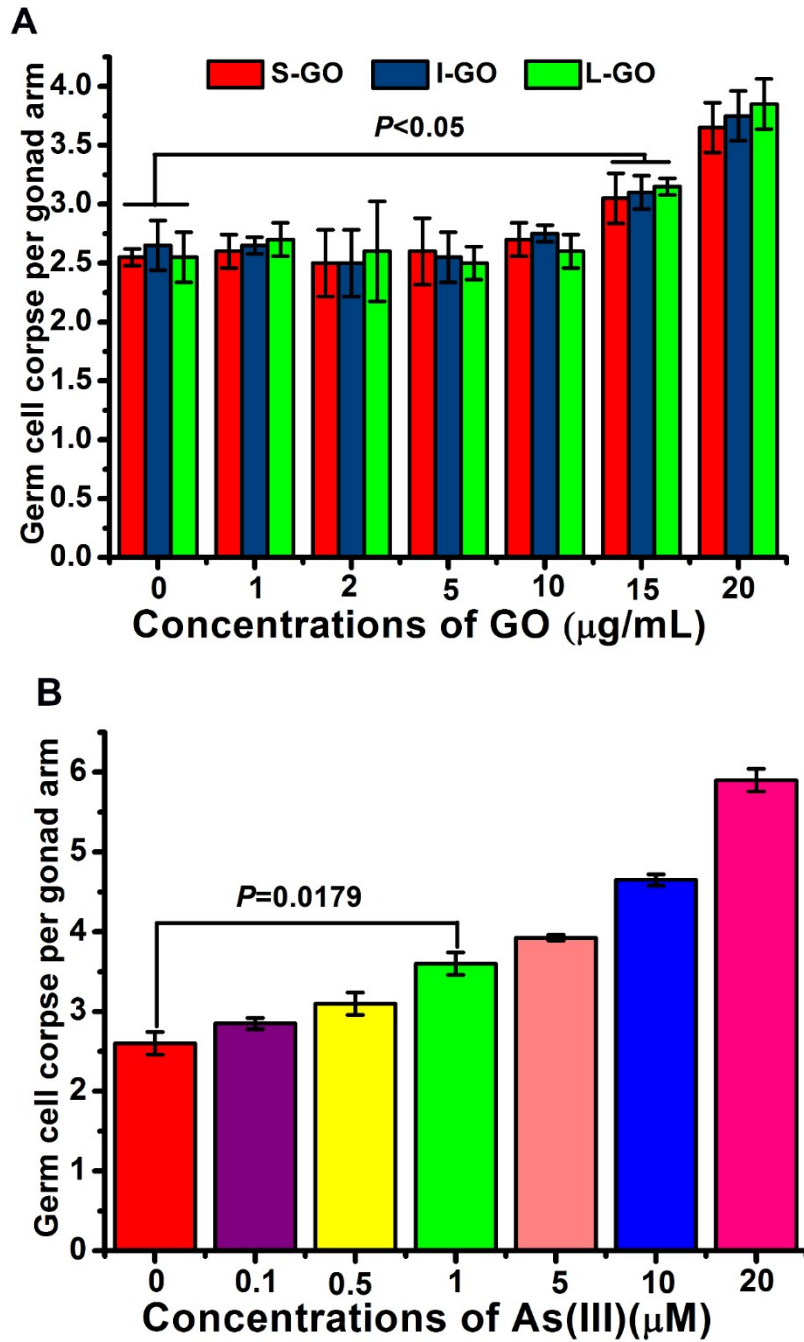


Fig. S2 Average number of S-GO, I-GO, L-GO and As(III)-induced germline apoptotic cells. (A) *C. elegans* were treated with graded doses of S-GO, I-GO, and L-GO for 24 h, and the toxicity was detected as germ cell corpse per gonad arm. (B) *C. elegans* were treated with graded doses of As(III) for 24 h, and the toxicity was detected as germ cell corpse per gonad arm ($n=3$).

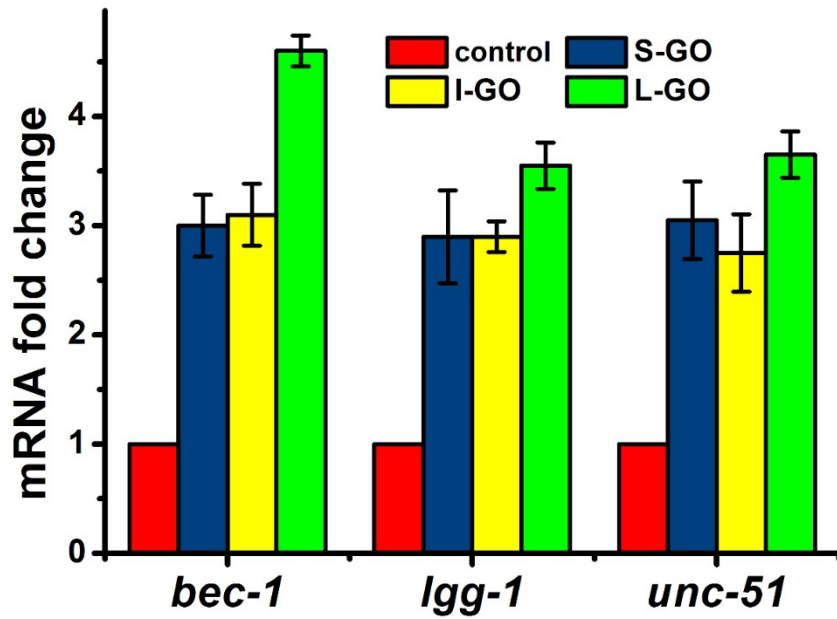


Fig. S3 Gene expressions levels in wild type nematodes following GO treatment. Relative expression of *bec-1*, *lgg-1*, *unc-51* after exposure to 10 $\mu\text{g}/\text{mL}$ S-GO, I-GO and L-GO for 24 h. Gene expressions levels were determined using qRT-PCR assay ($n=3$).

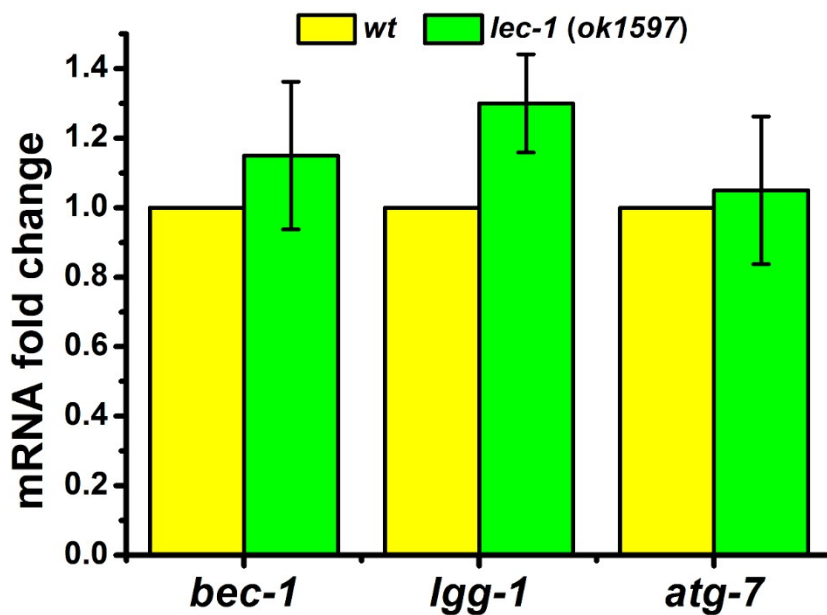


Fig. S4 Relative expression level of autophagy response genes in wild type and *lec-1 (ok1597)* nematodes following GO exposure, and wild type and *lec-1 (ok1597)* nematodes after exposure to 10 µg/mL L-GO for 24 h. *bec-1*, *lgg-1*, *atg-7* expressions levels were measured using qRT-PCR analysis ($n=3$).