Electronic Supplementary Material (ESI) for Environmental Science: Nano.

Supporting Information:

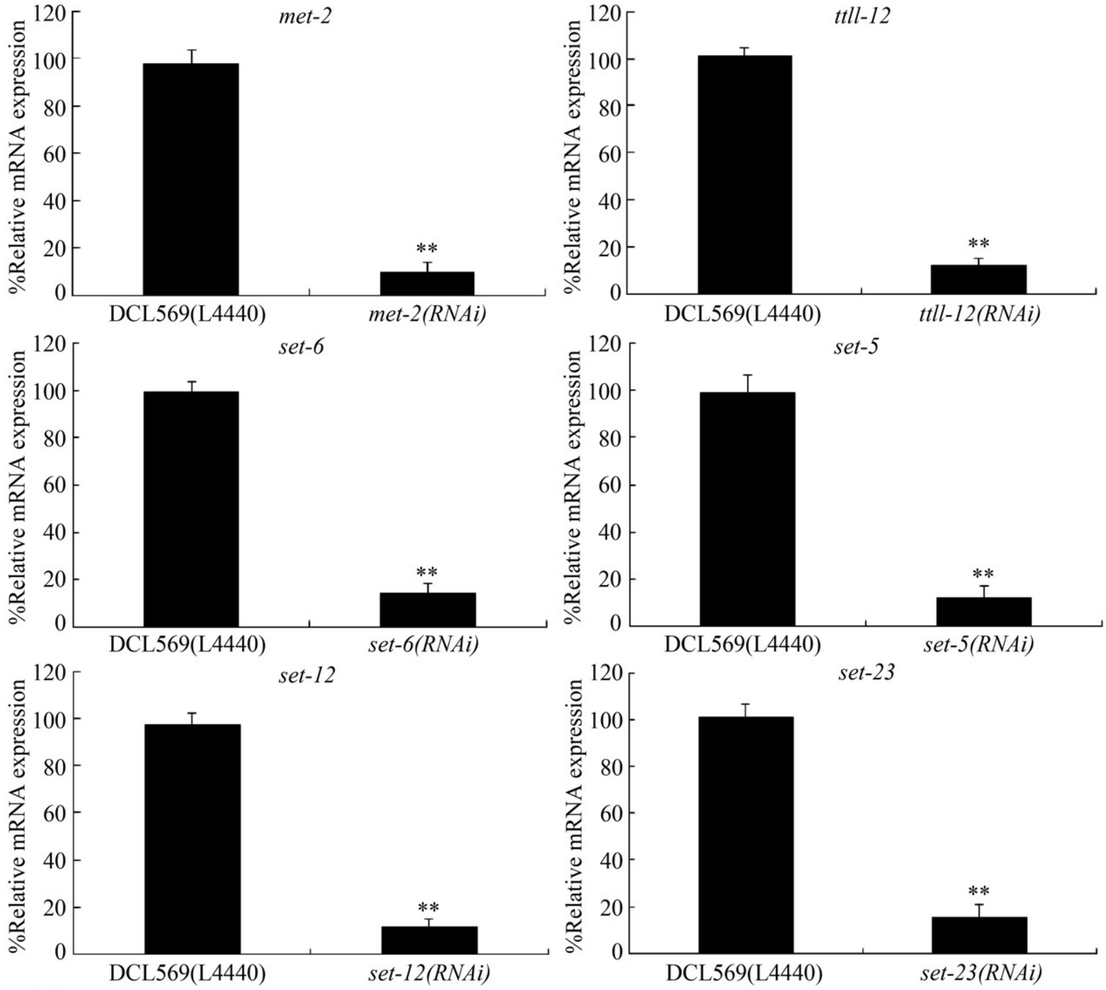

Figure S1. Efficiency of germline RNAi knockdown of *met-2*, *ttll-12*, *set-6*, *set-5*, *set-12*, and *set-23* in DCL569 nematodes. L4440, empty vector. Bars represent means ± SD. $^{**}P < 0.01$ *vs* DCL569(L4440).

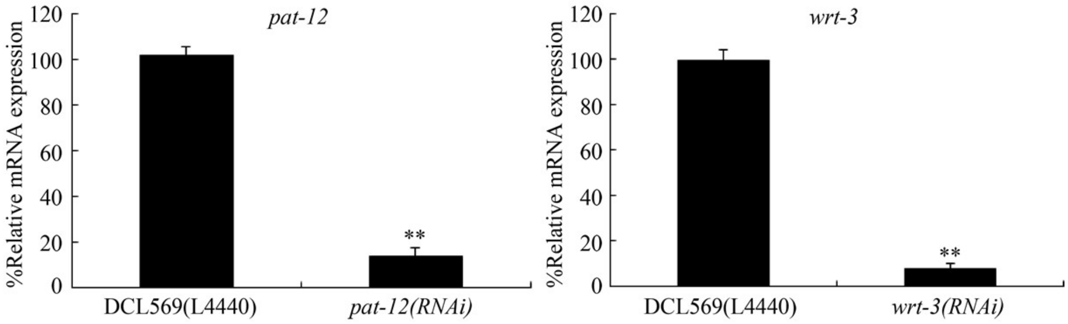

Figure S2. Efficiency of germline RNAi knockdown of *pat-12* and *wrt-3* in DCL569 nematodes. L4440, empty vector. Bars represent means ± SD. $^{**}P < 0.01$ *vs* DCL569(L4440).

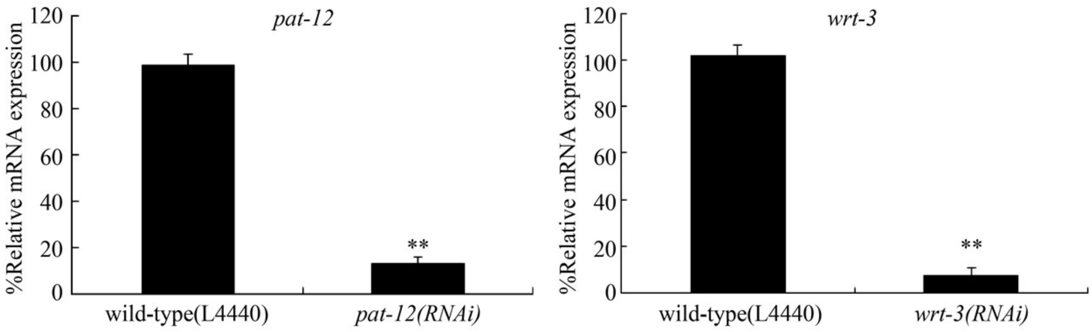

Figure S3. Efficiency of RNAi knockdown of *pat-12* and *wrt-3* in wild-type nematodes. L4440, empty vector. Bars represent means ± SD. $^{**}P < 0.01$ *vs* wild-type(L4440).

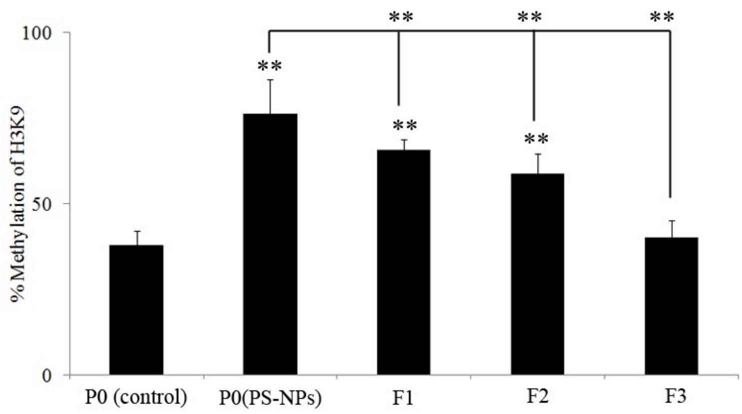

Figure S4. Methylation status of histone H3K9 in P0, F1, F2, and F3 generation after exposed to PS-NPs (1 μg/L). PS-NPs, polystyrene nanoparticles. Bars represent means ± SD. $^{**}P < 0.01$ *vs* P0(control) (if not specially indicated).

Table S1. Information for *C. elegans* strains

Strains	Genotype	Description
N2		Wild-type
DCL569	*mkcSi13*[*sun-1p::rde-1::sun-1 3'UTR* + *unc-119*(+)]*;rde-1*(*mkc36*)	Germline RNAi knockdown tool
	*Is(*P*mex-5-met-2)*	Nematodes overexpressing germline MET-2

References:

Zou, L., Wu, D., Zang, X., Wang, Z., Wu, Z., Chen, D., 2019. Construction of a germline-specific RNAi tool in *C. elegans*. Sci. Rep. 9, 2354.

Wang, S.-T., Zhang, R.-J., Wang, D.-Y., 2021. Induction of protective response to polystyrene nanoparticles associated with methylation regulation in *Caenorhabditis elegans*. Chemosphere 271, 129589.

Table S2. Primer information for qRT-PCR

Gene	Forward primer (5'-3')	Reverse primer (5'-3')
mes-2	CAGGAGAAGGCGAAGCGTAA	GCACACTCCGTTTTCACGAC
mes-4	ATGCGTGATTTGCCACGAAG	GCCGATTGCTTGTGATGGTC
met-1	ACGCAAAGTGGTATTGCCTAA	GCGTACTCGATCTCCGCTTC
met-2	ATCAGCGATTCACCGGTTGT	TGCTGATGCAGGTGATGTGA
blmp-1	CATCAATGGCTGGAGGTGGT	CTTGCGTAGTCCCTGCTGAA
set-1	TGTTGTCGAATACAGAGGTGTT	CTCCTTGTGCGATTTGACGC
set-3	TACCACGTGGATCGAAGGAAC	TTTGACGACGAGCTCCGAGA
set-4	CGCTGTTCGACTCTATGGCT	GGATCGTGAGCGGAGTTCAT
set-14	ATGAATCTTCCCCCAGACGC	TCGAGTCGTTCGCAACTTCA
ttll-12	GGCTGCTTGTGCAATGAGAG	CTTGGGAACAACAATGGGCG
set-17	GAAATCAGCGACGGGGCATA	TAATCCGGCATTCGGCAACT
set-27	CTGAGTAAGCAGCCACCGTC	AAGTGACAGCCCAGCAGTTT
set-29	TCTTTCCCGAACTGAGCCAC	GCGGAATGAGCACTTTAGCG
set-5	AGGAGCTGCTTCCGACACTA	CAGTCCCTCGAGCATCCAAA
set-6	TTACACCCGCCAATATGCGA	TCAACCCGAACCTCCTCAAC
set-9	AAGCGTAAAGAAGCACGACG	CGTTTTCTGGAATCATTGGCGG
set-12	ACCAAGGCCGAGCACAATAA	CTACATGCTGCTTCCCCACA
set-13	ACCAAAGGCCCAGTAATCCG	TATCGCTCCCAAAGTGCTCG
set-21	CATTTGCTGGCAGAACAGGG	GAAGCACGGGCATTTTTCGT
set-24	CGTCCTCGTCAACTGTCCAA	TCAGTTGCGTCAGGAGCATT
set-26	CGAGAGCAACAACAGCAGAT	GTCTTGGCGCTCTGCTACTA
set-28	CACTCGATGGATCGTGGGAA	CTCGTGGCACAAGTGTTTCG
set-31	TCTCCACCCAAAATACCGGC	GTCACTAAGCGCGGTATCCA
set-32	TCGAACTGGAGGCGTCTTTT	CAAAACTTCCGCACTCGCAT
set-2	CGAAGAACCTGCACAAGTCG	ACGATTGATTGTTGTAGAGAGTCAT
set-16	CCGAGCGCGGTATGTTCTAT	TGGCTGGAATTCTGGCTCTG
set-23	CGAGTTGTGCAATGTGGACC	TTCACGGGTTTTCCACCGAA

wdr-5.1	TGCCCAAACTCCCAATCCAA	ATGATCCGGAGACAACGAGC
ash-2	AGTTAAACAGCAACGGCGTG	TGGCTCACGGTTTTCCCTTT
rbbp-5	TTGGCTGTACTGATGGCAGG	TGCTCTACCGTTGGCTGTTT
his-24	TTCCAAGCAGGCAATCCTCA	CTTTGGGCTCTTGGCCTTCT
tba-1	TCAACACTGCCATCGCCGCC	TCCAAGCGAGACCAGGCTTCAG