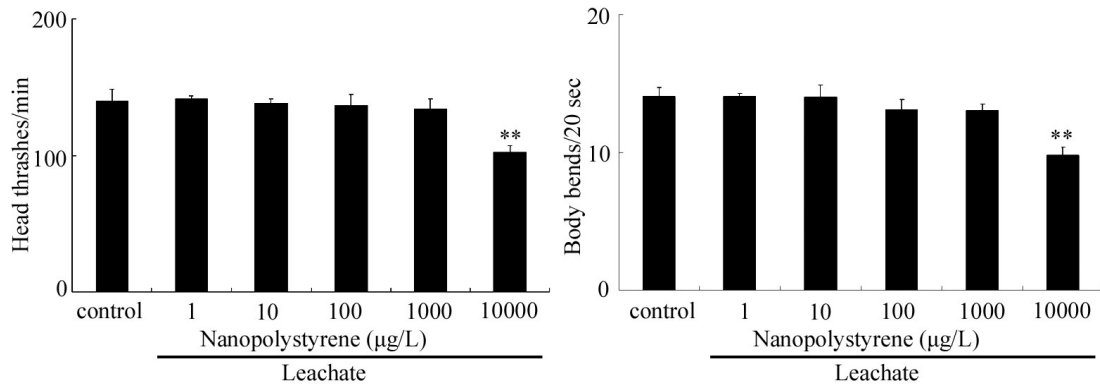**Supporting Information:**

Fig. S1. Toxicity assessment of leachate from nanopolystyrene in in decreasing locomotion behavior. Exposure to nanopolystyrene was performed from L1-larvae to adult day-3. Leachate from nanopolystyrene was prepared by centrifuging (13 000 g for 20 min) the nanopolystyrene solutions after the preparation of nanopolystyrene solutions for one week. Prolonged exposure was performed from L1-larvae to adult day-1. Bars represent means ± SD. $^{**}P < 0.01$ *vs.* control.
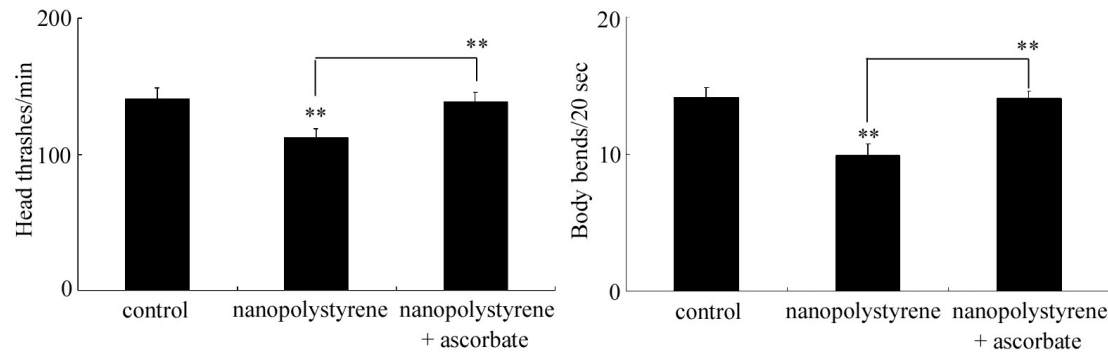
Fig. S2. Effects of treatment with antioxidant (10 mM ascorbate) on toxicity of nanopolystyrene (1 µg/L) in decreasing locomotion behavior. The nematodes were first exposed to nanopolystyrene (1 µg/L) from L1-larvae to adult day-1, and then treated with 10 mM ascorbate for 24-h. Control, without nanopolystyrene exposure and ascorbate treatment. Bars represent means ± SD. $^{**}P < 0.01$ *vs* control (if not specially indicated).
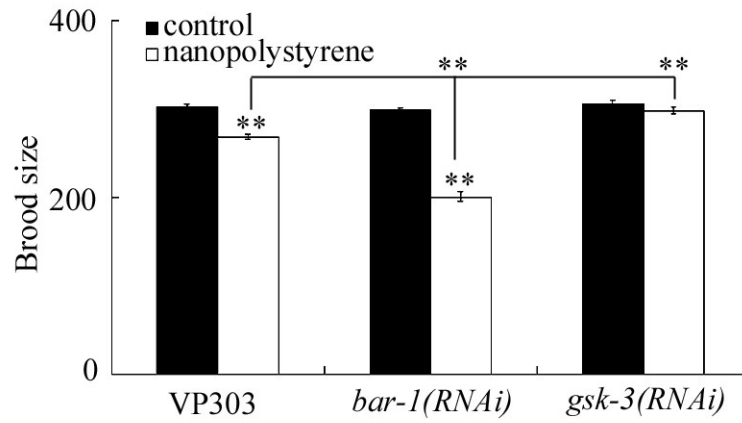
Fig. S3. Effects of intestine-specific RNAi knockdown of *bar-1* or *gsk-3* on brood size in nanopolystyrene exposed nematodes.　　Exposure to nanopolystyrene (1 μg/L) was performed from L1-larvae to adult day-3.　　Bars represent means ± SD.　　[**]*P* < 0.01 *vs* control (if not specially indicated).
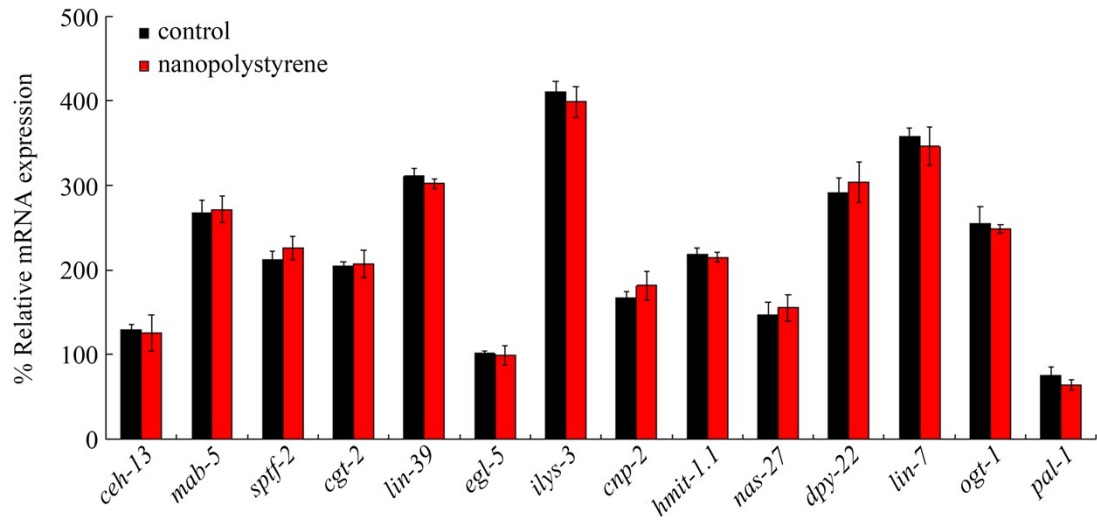
Fig. S4. Effect of nanopolystyrene exposure on expressions of possible targeted genes of *bar-1*. Exposure to nanopolystyrene (1 μg/L) was performed from L1-larvae to adult day-3. Bars represent means ± SD.
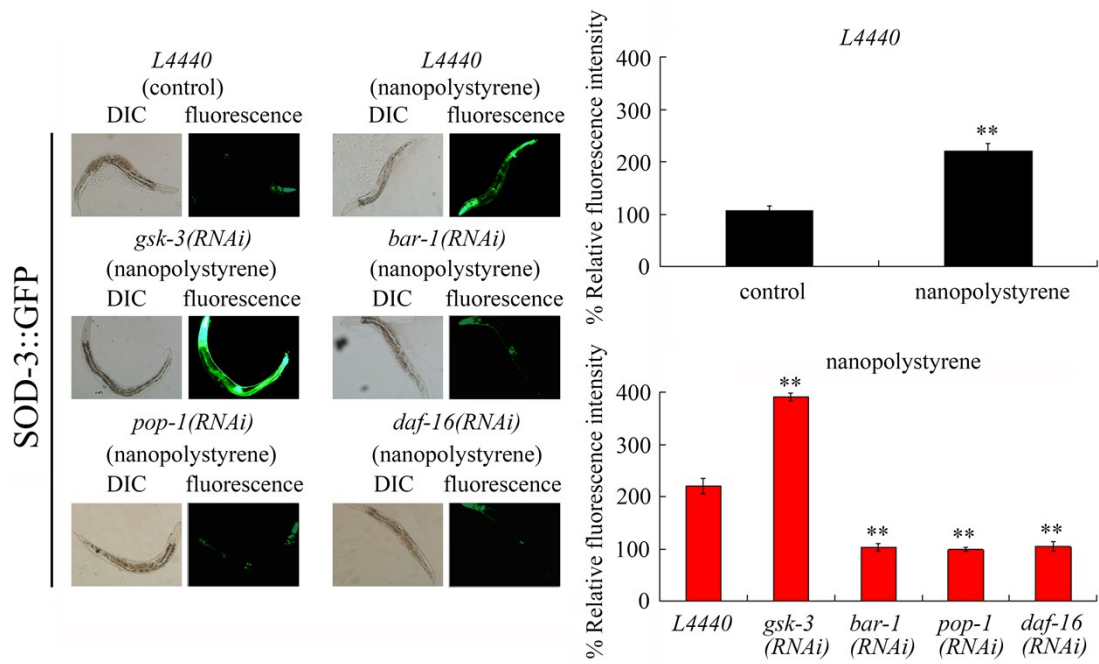
Fig. S5. Effect of RNAi knockdown of *gsk-3*, *bar-1*, *pop-1*, or *daf-16* on SOD-3::GFP expression in nanopolystyrene exposed nematodes.   Exposure to nanopolystyrene (1 μg/L) was performed from L1-larvae to adult day-3.   Bars represent means ± SD.   **$P < 0.01$ *vs* control or L4440.

Table S1. Primer information for qRT-PCR

Gene	Forward primer (5'-3')	Reverse primer (5'-3')
lin-17	GCTTTGCATGAAGCCTACGG	AATGCGACTTGGGATCGTGT
mom-5	AATTCCAGCGAGTCGAGCAA	CATTCAGGAAGGCGTCCACT
mig-1	CGTCTCGAGATGCTCCACTC	TCGGTGCACGAGATTTGGAA
cfz-2	AACTGGATGGCGTTCTGGAG	ATGAAGATCGGACGTTCGGG
mig-5	TTCGTTCTATGGCTCGTCCG	GCAGCTAACAATCTCGCAGC
dsh-1	AAGCTCTGTGATGCTCCCAC	ATTCGCCGTCGCTTACCATT
dsh-2	GAAGTGCACGTACCACCTGA	CAGATCCCTCGACGGTAAGC
apr-1	AATAGGAGGTGCCGCACAAA	TAAGGCGAGGCGAGACTTTC
pry-1	CCGTAAAAGTGCCGCACAAA	TGTCCCCAGAAAACGTCGAG
kin-19	CCCAGCTGAGTTCCCAATGT	AACTCCAGCTGATGGAACGG
gsk-3	AGAGTTGCCCGGCACTATTC	ACGTTTGGCTCATTGCGAAC
bar-1	GTGGCAACAATGGGGTTGTC	TACGTCTCGGGAGGTCCAAT
pop-1	GATCGAAGGGCTCAAGGAGG	TCAGTTGCGTACTCGCACTT
daf-16	AGGTGTTACACGTGGCCAAT	TGGCTTCTTACGACAACGCT
ceh-13	AGCTTCAGGACTTTCTCCGC	TGACGATGTCGGTGAGTTGG
clec-60	TTTCTGCCGAAACTCGTGGA	CCAGTCGTCAGTGGCTTGAT
clec-52	TGGAGCCCTCTATCAGCAGT	AGTTGCATACAGGCGGTTGA
F53A9.8	ATCACTGCGACACCCAACAT	GGGAGTCGTGAGCATGAGAG
mab-5	GACAGGCGACGATTCGTACT	CACCGCCCATCTTCATCCAT
sta-2	ATGAAGCTTCCGGTTGCAGA	CGACGTCGGAGAACTTGTGA
grd-12	CAACCCCTCCAGCTTACGTT	TGGACGAGTCACTCCGGTAT
mrp-5	GTCACCGGATTTTATGCCGC	ACGTGATCGTAGAGTGGGGA
prx-5	TGCTGCAGCTTCTCTTCTCC	GCCCAGTTTTGAGTCCCAGA
daf-41	CCCAGCGTGAATCACTTGTC	GAATCCGTTCGCCATTCCAC
sptf-2	TGGGAGAGCCATGGGAGTTA	ATTCGGGCATGTGCATCTCT
cgt-2	CAACCCTTCACTACCCGGAG	CGGTTGGGCAGTTGAATTGG
lin-39	AAGGACTGGGAGGTCCTCAA	CGCGTGAACCTCCTGTAGTT

egl-5	ACGGTGAGTTGTTCGCATCA	CGGTGGACACAACGGGTATT
ilys-3	GGACGTCGGATCCCTTTCTT	GCTAAGATCATTCGCGCACC
cnp-2	TCAAAAACGCCAAGCGACAG	ACACTGCAGTCGTAGTTGGG
hmit-1.1	AGTACGGGCTCATGCACAAA	CGCAATAACGGTTAAGCCCG
nas-27	AACCGCAACGAAGGAGACAT	TCCAGTGACAACGACTGCTC
dpy-22	ATGGGAAGCAGTGGCTACAC	CACGCTGGTTCTGTTGTTGG
lin-7	AATGTTATGGGCGGCAAGGA	GTCGGGAGTGTTGGACTCTG
ogt-1	GGTGATAGGAGCAACCGGAG	GCTGAGAGGAGCAATAGCGT
lin-23	TCCGCCTGCAGTTTGATGAT	GTCAAAAGCAGCCATTTCTTGC
pal-1	GGAAGGTGGTCACAAATGGG	TCCACGAGAATCCCTGAAACT
acs-1	ACAGTTCGACATCGCCAGTT	GTGTTTGGCCCCCAAATTCC
pnk-1	TTGAGGCGAACACCACCAAA	TTCTGGAAGCTCCTCATCCA
elo-5	TGCCGTCGGATATATTGCCA	CCGGTCAATGCGTGATGGTA
elo-6	CTGGAATGCGGGTCTTGCTA	TGCTGGAACCTTGACACCAA
kat-1	ACTGACCGATGCTTATGAT	GTTGGTGCTACAGCGAAA
T02G5.7	TCTTTGTCGGCTGGTCTTCC	CGTCACGAACGAAGACTGGT
acox-1.1	CTTTCCAGTTTGCTGGTGCC	AGTGGTCCAAGCTGAGAAGC
acox-1.2	ATGGCAGCGGTGATCTATGG	CTCTTCCCAAGTGCTCCAGG
acox-1.3	GCCGTCGACAACTCACTGAA	GAACTCTTCCCGAGTGCTCC
acox-1.4	ATGGCGGCTGTGATCTATGG	CTGGGAAGTAGGTGGCAGTG
acox-1.5	AACTGAGTGGTGGCTGATGG	GAGATGGAGCCGTGTAGAGC
acox-1.6	ACCTCGCGCTTAACAACTCA	CAGGGTACACGTTTCCGTCA
acox-3	TGGAGACATGGGCTCGAAAC	ATTGCAGCGGATAGGTACGG
tba-1	TCAACACTGCCATCGCCGCC	TCCAAGCGAGACCAGGCTTCAG