Research Paper; Submitted to "Nanoscale"

Supporting Information:

Supplementary Figure 1:

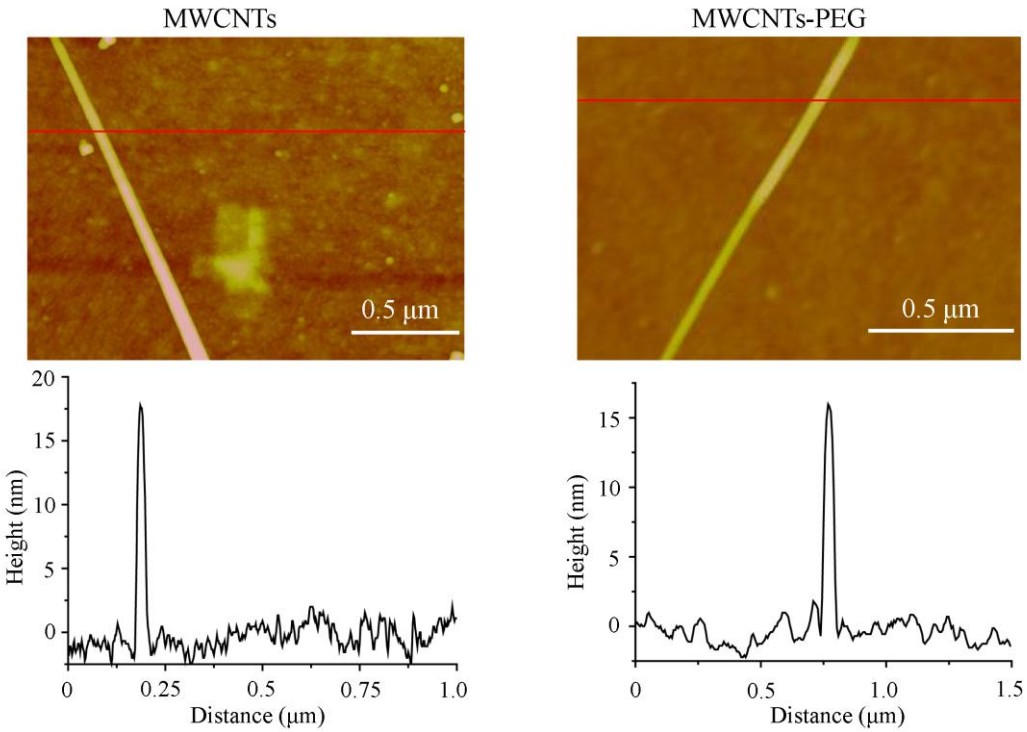

Fig. S1 AFM images of pristine and PEGylated MWCNTs.

Supplementary Figure 2:

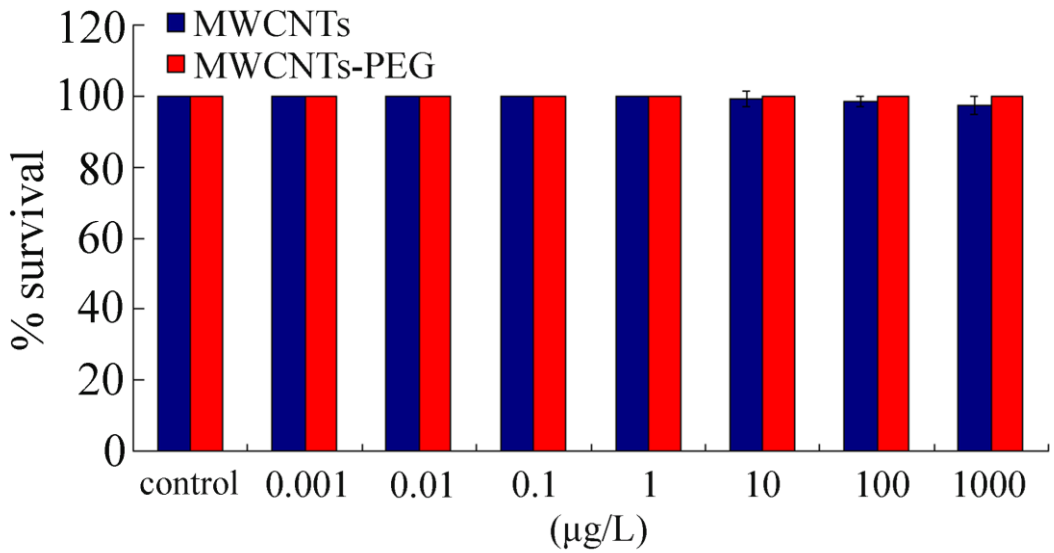

Fig. S2 Comparison of survivals in MWCNTs-PEG exposed nematodes from those in MWCNTs exposed nematodes. Exposure was performed from L1-larvae to adult. Bars represent mean ± S.E.M.

Supplementary Figure 3:

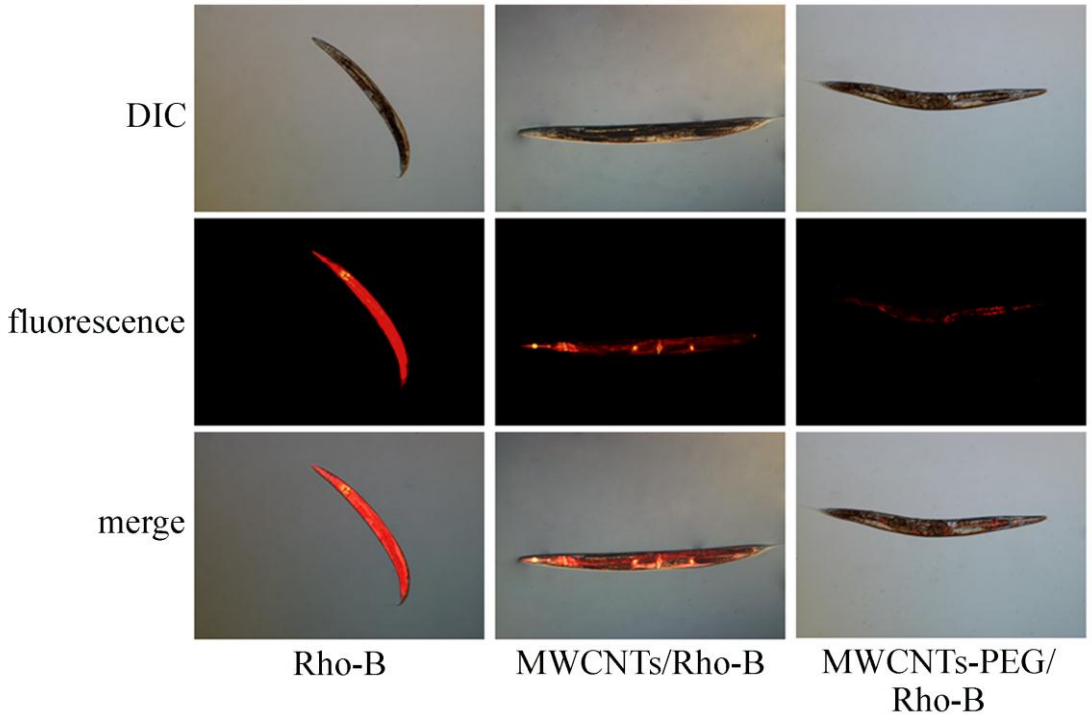

Fig. S3 Distribution of Rho-B, MWCNTs/Rho-B and MWCNTs-PEG/Rho-B in nematodes.

Supplementary Figure 4:

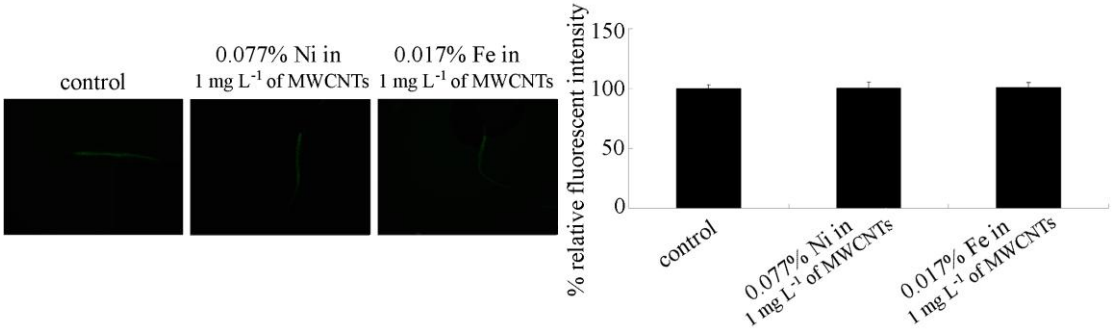

Fig. S4 Effects of Ni and Fe in MWCNTs on ROS production. Bars represent mean ± S.E.M.

Table S1. Information on genes required for intestinal development in *C. elegans*

Gene	Products of the genes
gem-4	Ca^{2+}-dependent phosphatidylserine binding protein
mtm-6	myotubularin lipid phosphatase orthologous
nhx-2	sodium/proton exchanger
opt-1	high-affinity, proton-coupled oligopeptide transporter
pkc-3	atypical protein kinase
par-3	PDZ domain-containing protein orthologous
par-6	PDZ-domain-containing protein
pgp-1	transmembrane protein
pgp-3	transmembrane protein
vha-6	membrane-bound (V0) domain of vacuolar proton-translocating ATPase (V-ATPase);
gtl-1	TRPM subfamily member of the TRP channel family
erm-1	ortholog of the ERM family of cytoskeletal linkers
eps-8	homolog of mouse epidermal growth factor receptor kinase substrate
act-5	ortholog of human cytoplasmic actin
ifb-2	nonessential intermediate filament protein
dlg-1	MAGUK protein
ajm-1	member of the apical junction molecule class
egl-8	phospholipase C beta homolog
let-413	protein with strong similarity to human ERBIN, rat DENSIN, Drosophila SCRIB and its human ortholog hSCRIB
nfm-1	homolog of human merlin/schwannomin (NF2)
inx-3	gap protein
lin-7	protein that contains a PDZ domain and an L27 domain
nhx-4	sodium/proton exchanger
abts-4	anion transporter

Table S2. Information on genes required for oxidative stress or stress response control in *C. elegans*

Gene	Products of the genes
sod-1	copper/zinc superoxide dismutase
sod-2	manganese - superoxide dismutase
sod-3	manganese - superoxide dismutase
sod-4	copper/zinc superoxide dismutase
sod-5	copper/zinc superoxide dismutase
isp-1	"Rieske" iron-sulfur protein
mev-1	a subunit of the enzyme succinate dehydrogenase cytochrome b
gas-1	subunit of mitochondrial complex I
clk-1	ubiquinone biosynthesis protein COQ7
clk-2	telomere length-regulating protein
ctl-1	catalase
ctl-2	catalase
ctl-3	catalase
hsp-16.1	heat-shock protein
hsp-16.2	heat-shock protein
hsp-70	heat-shock protein

Table S 3. Primers used for quantitative real-time polymerase chain reaction (PCR)

Gene	Forward primer	Reverse primer
tba-1	TCAACACTGCCATCGCCGCC	TCCAAGCGAGACCAGGCTTCAG
clk-1	CACATACTGCTGCTTCTCGT	TGAACCAACAGATGAACCTT
clk-2	TATCCTTTGTTGGTTTTGCC	CAAATACACTCTACACCGCA
ctl-1	CTCCTACACGGACACGCAT	GCATCTCCCTGGCTTTCAT
ctl-2	CGAACAGCTTCAACTATGG	GTGGCTGGGAATGTGGTAT
ctl-3	TTCTCCTACACGGACACGC	GCATCTCCCTGGCTTTCAT
gas-1	CTTGGTCTTTGGCTGTTGA	CTTGGTCTTTGGCTGTTGA
isp-1	GCAGAAAGATGAATGGTCC	CAGAAGCGTCGTAGTGAGA
mev-1	GGAATTCGCTTCTTAGGAT	GCAGTCTTGTTGCTCTTGT
sod-1	ACGCTCGTCACGCTTTAC	TCTTCTGCCTTGTCTCCG
sod-2	GGCATCAACTGTCGCTGT	ACAAGTCCAGTTGTTGCC
sod-3	TGACATCACTATTGCGGT	GGGACCATTCCTTCCAAA
sod-4	CACCAGATGACTCGAACA	AATGAGGCAAGAGAGTCG
sod-5	ATATTGCCAATGCCGTTC	CTCTTCACCTTCGGCTTT
hsp-16.1	CCCGAAGATGTTGATGTTGG	GAATCGCTTCCTTCTTTGGTG
hsp-16.2	CCCGAAGATGTTGATGTTGG	GAATCGCTTCCTTCTTTGGTG
hsp-70	CTTCCAAAACATTTACAACG	TGTTCCAAGACGATGATTATCTC
gem-4	CACGGTGGTCAACAGTAT	TTGTATTTGGCACCTTTC
mtm-6	AAAAGGGACGCTAACAGC	ATTCTCAAACGCAAGCAG
nhx-2	GGAGCAGAATGTGAAGAA	GTGGCGGAAGTAGATAAA
opt-1	TGATGTCCGTTCCCTACT	ATGACCTGAAAGAGTGGG
pho-1	ACGGACATGATGTAGGAG	ATTAGAAGTGCGGAGAAG
pkc-3	CGTCTCCGACATCATTAG	CAACTCGGCTTCTTGACT
par-3	AAGCGTAACTGTCAACCA	CCGTCTATAACATCCTCC
par-6	ATTCTGCGTCTGGTGTCT	TTCCCTTCCATCGTTTAT
pgp-1	AATGTCCGATTCGCTTAC	CTCAGGGTTCAACGTCTT
pgp-3	GGACTTCCTGACGGTTAC	TTTGATGGGTTCCTTCTT

vha-6	ATGGAGGCAAACTTAGAG	TTCCGAGATTGACATAGC
gtl-1	CTGCTCACCACGCACAAT	AACTCCTTCATCCAACCC
erm-1	TCCACGACTCCGTATCAA	TCCTGCTCGGCAATCTTA
eps-8	ACGCAGTGACGGTAGAAG	AGCGGATACACGGATACA
act-5	GGGAGTGATGGTCGGTAT	CGGTAAGGAGAACTGGGT
ifb-2	TCAAGGCTGAATACGACA	TCCAAAGCAGAGTTACGG
dlg-1	TTGAAACGGCGTAAAGAT	CGTGATGAACTGGTGGTG
ajm-1	GTCAATCAGTTCGTCCCG	ACTCGTCCGATGGTGTCT
egl-8	GCTCGATGGCTTCAAGTA	TGAATGCTATCCCTCTGC
let-413	TTGCGTCCAACAAGTTAC	CACCAAGAAATGCTCCTC
nfm-1	ATTACGGAGGATCTGGTA	TCATCGTCGTGAACTTAT
inx-3	CAGTGGGTGCCTATTGTG	GACCGTATTCGTTCTTGG
lin-7	GTTATGGGCGGCAAGGAG	CGTCGGGAGTGTTGGACT
nhx-4	GAAGATTGCTACCTGGAC	TCATAAGTGGGTGTTCCT
abts-4	CTCAGACTACAGGGATGG	GTGCCTGACTCACAAGAC