Supporting Information

Influence of Polyethyleneimine Graftings of Multi-Walled Carbon Nanotubes on their Accumulation and Elimination by and Toxicity to *Daphnia magna*

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Additional immobilization results to verify the validity of the experiments

Several additional experiments were performed to verify the validity of the immobilization experiments. Control containers with daphnia exposed to un-modified artificial freshwater were utilized during each experiment and consistently yielded less than 4 % overall immobilization, which is acceptable within test guidelines for OECD Guideline 202 [30]. Additionally, immobilization experiments with PEI-MWNTs, PEI- MWNT-Ac, and PEI-MWNT-Suc were repeated and reproducible results were obtained (data not shown). The measured 24-h EC_{50} value for the potassium dichromate (Figure S1 part a) was 0.91 ± 0.08 mg/L (uncertainty represents the 95 % confidence interval) which is within the range of 0.6 to 2.1 specified for daphnia neonates in OECD Guideline 202 [30].

Figure Captions

Figure S1: Percent of *Daphnia magna* not immobilized after 24h exposure to potassium dichromate solutions as a reference compound for toxicity. Mean and standard deviation values were calculated from five samples. Uncertainties for EC_{50} values represent 95 % confidence intervals. Solid lines are examples of fitted models used to determine EC_{50} values.

Figure S2: Percent of *Daphnia magna* not immobilized after 24h exposure to polyethyleneimine (PEI). Mean and standard deviation values were calculated from five samples. Uncertainties for EC_{50} values represent 95 % confidence intervals. Solid lines are examples of fitted models used to determine EC_{50} values.

Figure S3: Percent of *Daphnia magna* not immobilized after exposure for 24 h (a) and 48 h (b) to various dosages of 3:1 MWNTs, MWNT-PEI, MWNT-PEI-Ac, and MWNT-PEI-Suc. Mean and standard deviation values were calculated from five samples. Dotted lines are examples of fitted models used to determine EC_{50} values.

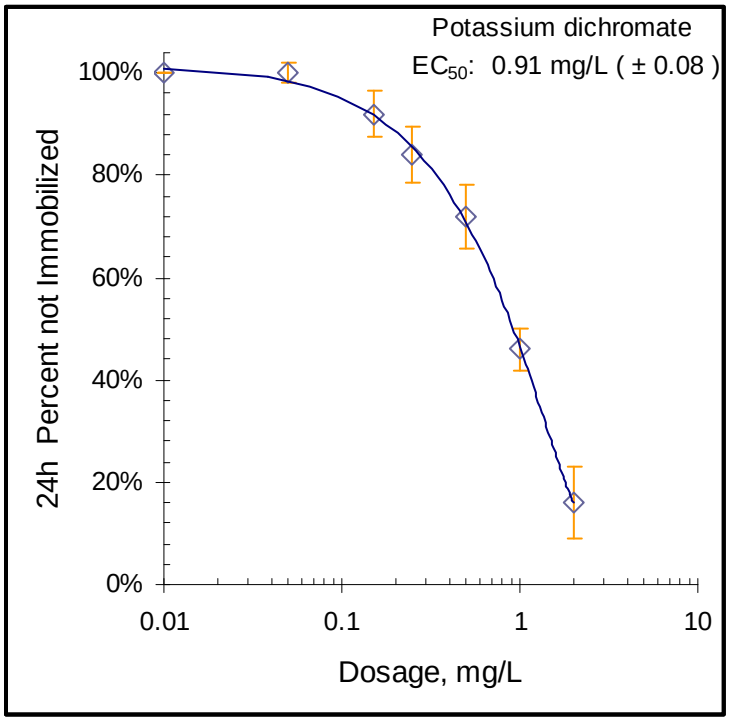

Figure S1

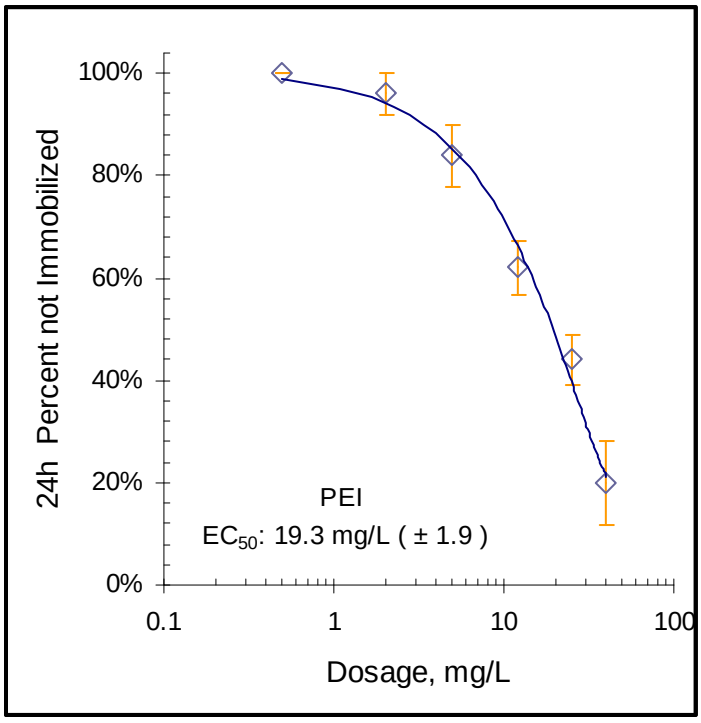

Figure S2

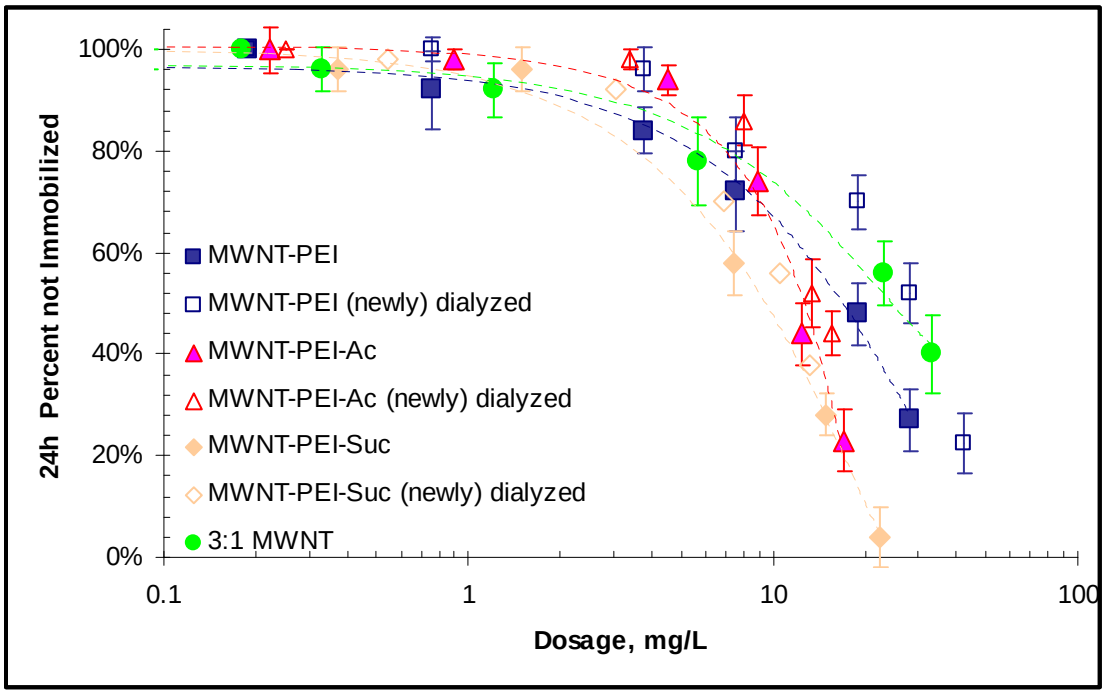

Figure S3a

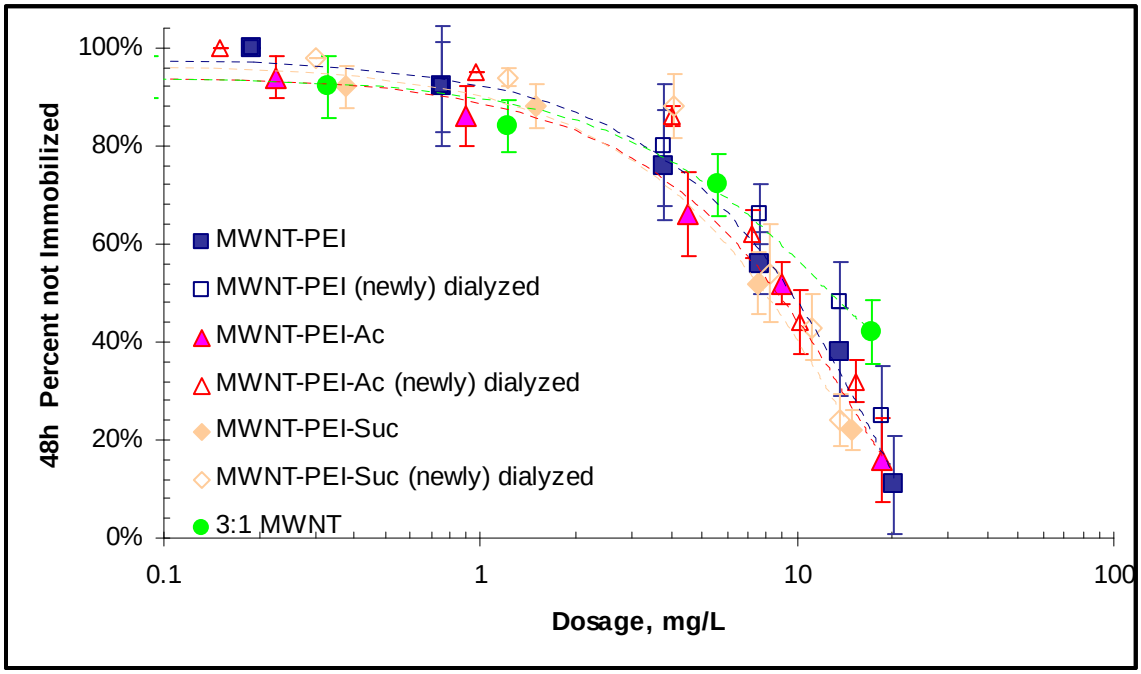

Figure S3b

Table S1-*Daphnia* body mass increase during carbon nanotube elimination in presence of algae.

	Lower Nanotube Concentration		Higher Nanotube Concentration	
	24 h	48 h	24 h	48 h
MWNT-PEI	33 (12)[a] %	30 (11) %	33 (8) %	27 (6) %
MWNT-PEI-Ac	37 (3) %	55 (8) %	36 (5) %	47 (8) %
MWNT-PEI-Suc	42 (6) %	81 (2) %	42 (7) %	55 (13) %
3:1 MWNT	70 (14) %	162 (12) %	63 (17) %	115 (21) %

a. Numbers in parentheses indicate standard deviations of triplicates of dry masses of groups of 10 *Daphnia* measured.