

## Supporting Information

# Shape Engineered TiO<sub>2</sub> Nanoparticles in *Caenorhabditis elegans*: a Raman Imaging Based Approach to Assist Tissue-Specific Toxicological Studies

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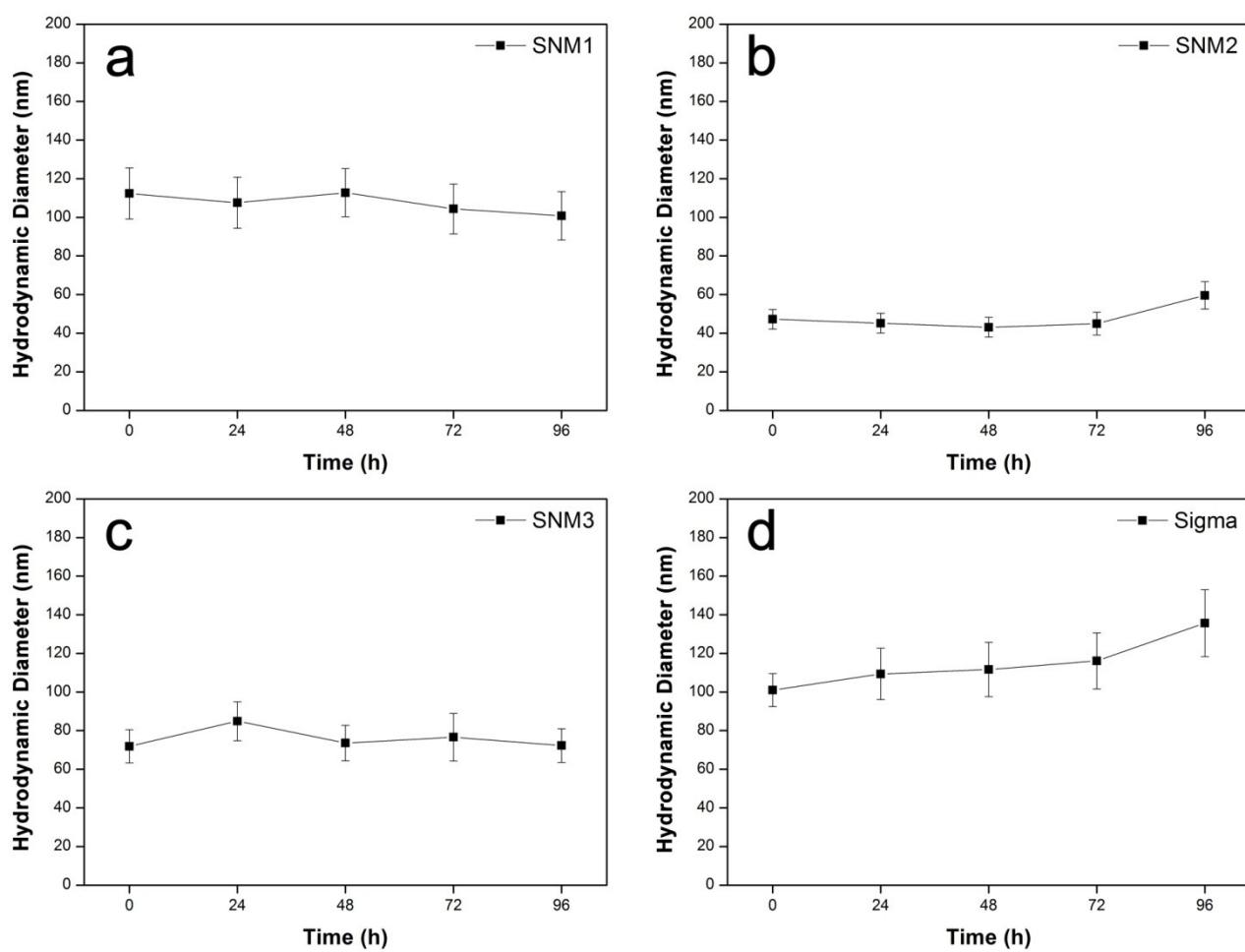
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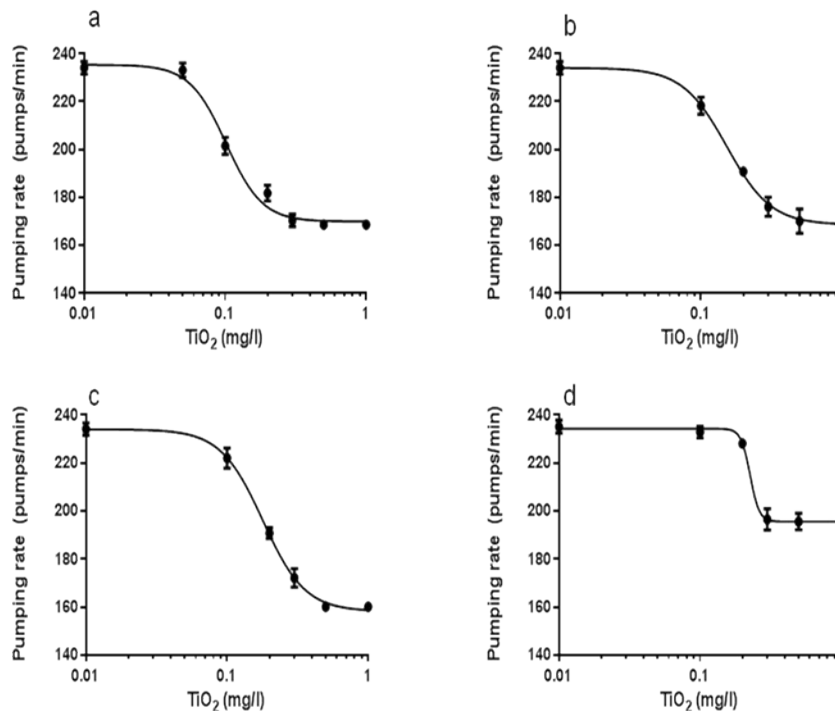
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## Stability of TiO<sub>2</sub> NPs dispersions



**Supporting Figure 1:** Hydrodynamic diameter of SNM1(a), SNM2 (b), SNM3 (c) and Sigma (d) dispersions obtained from DLS analysis over a period of 0 h, 24 h, 48 h, 72 h and 96 h.

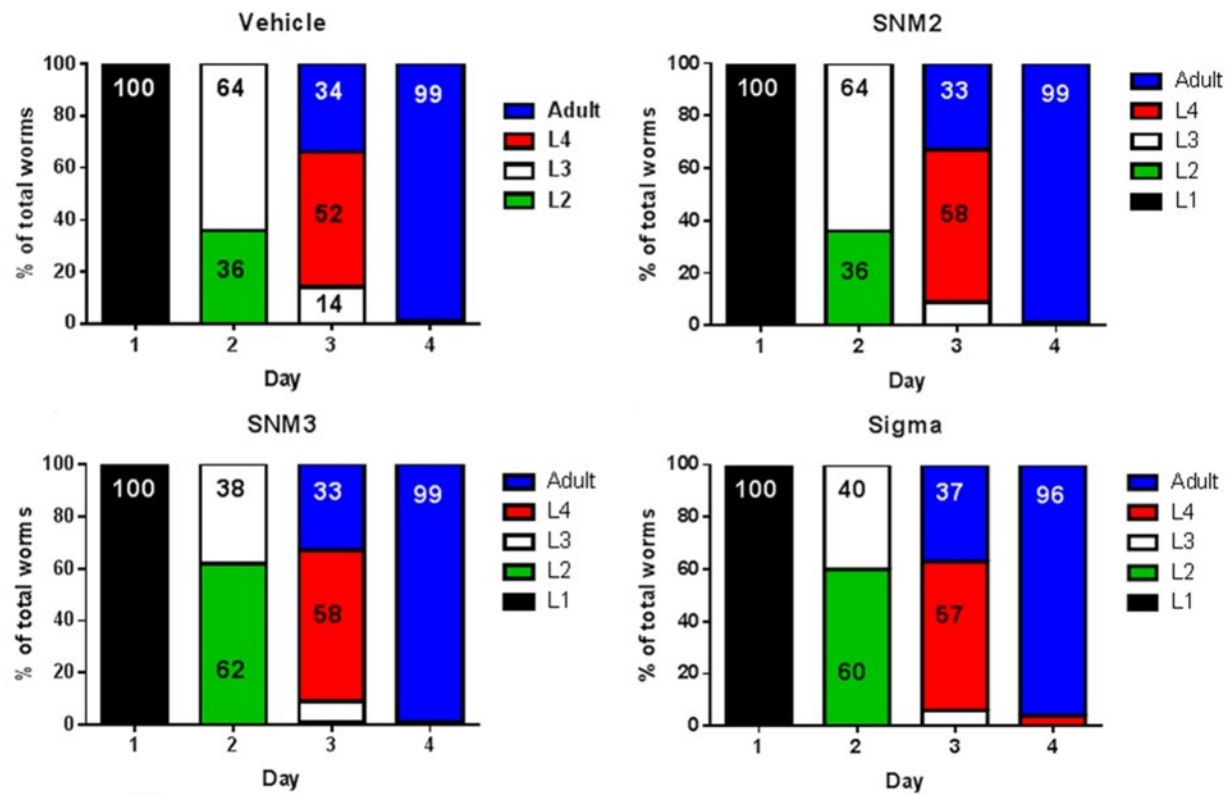
## Dose- response test



Nanoparticles	EC <sub>50</sub> (mg/l) ± SE	Bottom value (pumps/min) ± SE
SNM1	0.101 ± 0.10 *	169.9 ± 2.4
SNM2	0.179 ± 0.11	158.3 ± 4.3
SNM3	0.152 ± 0.11	168.6 ± 4.2
Sigma 2	0.227 ± 0.10	195.6 ± 2.7 *

**Supporting Figure 2:** Dose-response effect of different  $\text{TiO}_2$  NPs on the pharyngeal motility of N2 worms. Nematodes (100 worms/100  $\mu\text{l}$ ) fed for 2 h with 0.01 mg/l - 1.0 mg/l NPs suspended in distilled water in the absence of OP50 *E. coli* were then plated on Nematode Growth Media plates seeded with the bacteria. Control worms received distilled water alone (Vehicle). Pharyngeal pumping was scored 2h after plating. NPs dose-dependently reduced the pharyngeal pumping of worms (a, SNM1; b, SNM2; c, SNM3; d, Sigma). (e) IC<sub>50</sub> indicated a significantly higher maximal effect for Sigma NPs than the others. Data are expressed as the mean ± standard error (SE). \* $p < 0.05$  vs. SNM1, SNM2 and SNM3 according one-way ANOVA and Bonferroni *post hoc* test.

# Larval Growth Test



**Supporting Figure 3:** (a-d) L1 larval nematodes (100/plate), from eggs laid by worms fed NPs, were plated on fresh NMG plates seeded with OP50 for food (day 1). Larval growth was rated by counting 13, 22 and 40 and 66 h after plating of L1, worms at L2, L3, L4 and adult stages, on day 2, 3 and 4. Data are percentages of the total worms.