

1 **Supporting information**

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3 **Trophic transfer of TiO<sub>2</sub> nanoparticles from marine microalga**  
4 **(*Nitzschia closterium*) to scallop (*Chlamys farreri*) and related**  
5 **toxicity**

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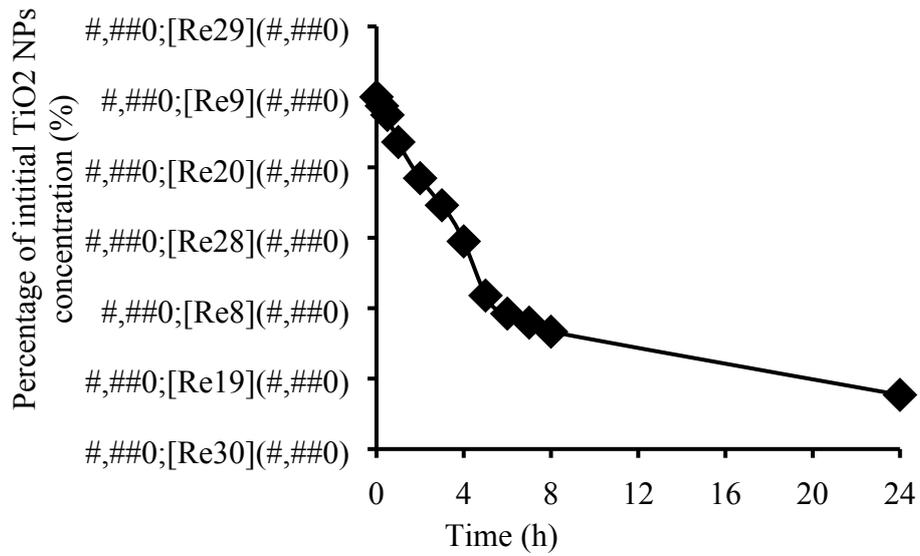
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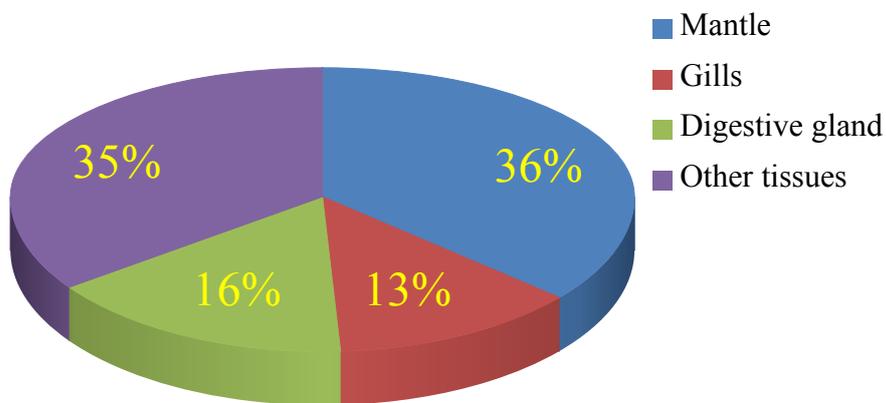
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24 **Figure S1.** Sedimentation of TiO<sub>2</sub> NPs aggregates (1 mg/L) in filtered seawater for 24  
 25 h. The ordinate represents the percentage of initial TiO<sub>2</sub> NPs remaining in the water  
 26 column.

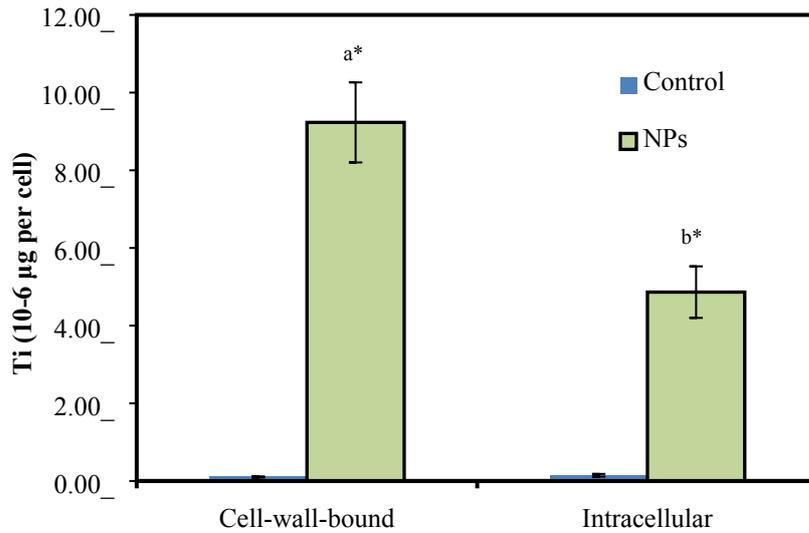
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29 **Figure S2.** Mass percentages (% dry weight) of gills, digestive gland, mantle and  
 30 other tissues in the whole scallops.

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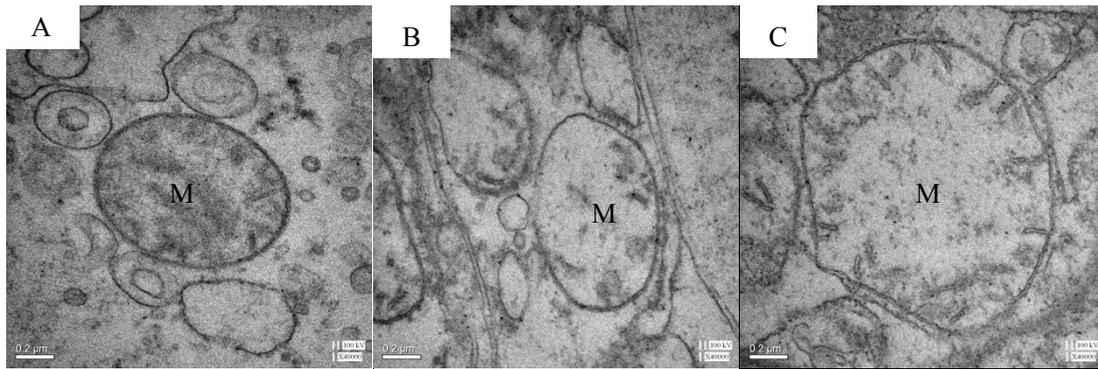


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33 **Figure S3.** Intracellular and cell-wall-bound Ti contents of controls and cells treated  
34 by 1 mg/L TiO<sub>2</sub> NPs after 24 h exposure. Asterisk indicates significant differences  
35 between TiO<sub>2</sub> NPs treatment and controls ( $p < 0.05$ ). Different letters (a–b) indicate  
36 significant differences between the intracellular and cell wall-bound Ti contents.

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40 **Figure S4.** TEM images of mitochondria in digestive gland of scallops. (A) Control;  
41 (B) Dietary exposure; (C) Aqueous exposure. M: Mitochondria

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45 **Table S1.** Hydrodynamic size, zeta potential, and polydispersity index (PDI) of TiO<sub>2</sub>  
46 NPs in ultrapure water and filtered seawater after 6 h.

Medium	Hydrodynamic size (nm) <sup>a</sup>	Zeta potential (mV) <sup>a</sup>	PDI <sup>a</sup>	Purity (%) <sup>b</sup>	Crystalline structure <sup>b</sup>
Ultrapure water	238.1 ± 17.7	-11.0 ± 1.3	0.38 ± 0.07	>99.5	Anatase: 98.6%
Filtered seawater	1354 ± 245	-9.3 ± 0.5	0.89 ± 0.03		Rutile: 1.4%

47 <sup>a</sup>: Measured in ultrapure water and filtered seawater (pH 7.9);

48 <sup>b</sup>: Characterized and provided by our previous study (Xia et al., 2015).

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#### 50 **References:**

51 B. Xia, B. Chen, X. Sun, K. Qu, F. Ma and Du M, Interaction of TiO<sub>2</sub> nanoparticles  
52 with the marine microalga *Nitzschia closterium*: Growth inhibition, oxidative stress  
53 and internalization, *Sci. Total. Environ.*, 2015, **508**, 525-533.

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