

Supplementary Materials

TiO₂, SiO₂ and ZrO₂ Nanoparticles Synergistically Provoke Cellular Oxidative Damage in Freshwater Microalgae

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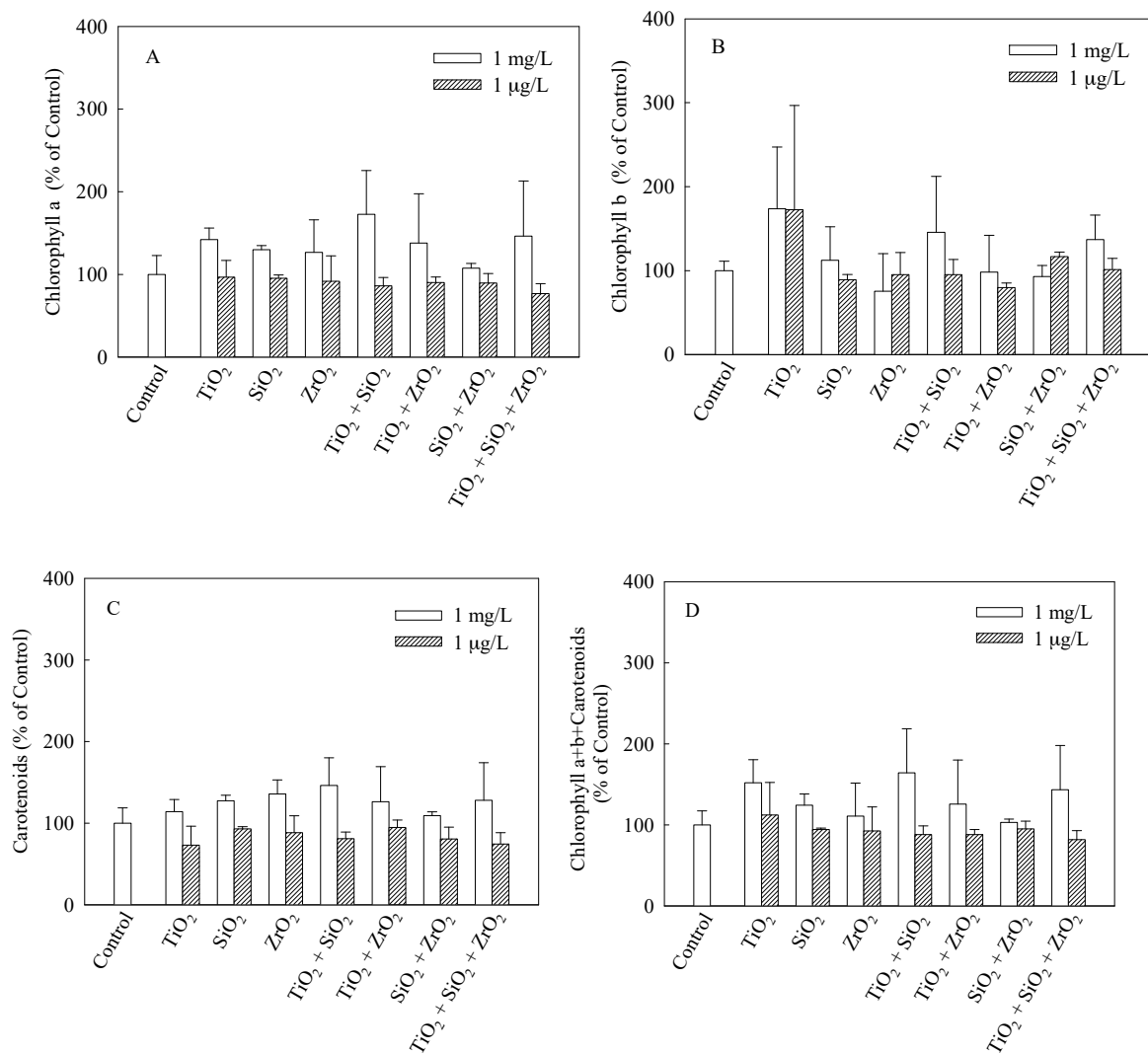


Figure S1. Relative levels of chlorophyll a (A); chlorophyll b (B); carotenoids (C) and the total content of chlorophyll and carotenoids (D) in *S. obliquus* exposed to 1 mg/L and 1 µg/L of NPs alone, 1 mg/L and 1 µg/L of single NPs in binary combination, and 1 mg/L and 1 µg/L of single NPs in ternary combination.

In the present study, chlorophyll contents were determined using the following empirical equations [S1]:

$$C_A = 12.21OD_{663} - 2.81OD_{645} \quad (1)$$

$$C_B = 20.13OD_{645} - 5.03OD_{663} \quad (2)$$

$$C_K = (1000OD_{470} - 3.27C_A - 104C_B)/229 \quad (3)$$

where C_A is the content of chlorophyll a, C_B the content of chlorophyll b, and C_K is the content of carotenoids [S2].

References

[S1] Wellburn, A.R.; Lichtenthaler, H. Formulae and program to determine total carotenoids and chlorophylls A and B of leaf extracts in different solvents. In: *Sybesma C. Advances in photosynthesis research. Advances in agricultural biotechnology*, Springer, Dordrecht, **1984**, 2.

[S2] Li, X.; Ping, X.; Xiumei, S.; Zhenbin, W.; Liqiang, X. Toxicity of cypermethrin on growth, pigments, and superoxide dismutase of *Scenedesmus obliquus*. *Ecotoxicol. Environ. Saf.* **2005**, *60*, 188–192.