

## Supporting Information

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### Impact of test conditions on the bacterial bioassay in the presence of TiO<sub>2</sub> nanoparticles

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**Table S1:** Chemical parameters analyzed in seawater samples, and related information about the procedure.

| Parameter                     | Method   | Instrument   | Reference |
|-------------------------------|--|--|-----------|
| SO <sub>4</sub> <sup>2-</sup> | Turbidimetric as barium sulfate (375.4): Sulfate ion is converted to a barium sulfate suspension under controlled conditions. The resulting turbidity is determined spectrophotometrically at 420 nm.  | UV-VIS spectrometry (Biochrom Libra S70 spectrophotometer) | [1]       |
| NO <sub>3</sub> <sup>-</sup>  | Sulfanilamide/ethylenediamine with Cd reduction (353.3): The nitrite (that originally present plus reduced nitrate) is determined by diazotizing with sulfanilamide and coupling with N-(1-naphthyl)-ethylenediamine dihydrochloride to form a highly colored azo dye which is measured spectrophotometrically at 540 nm   | UV-VIS spectrometry (Biochrom Libra S70 spectrophotometer) | [1]       |
| NH <sub>4</sub> <sup>+</sup>  | Nesslerization (APHA 4500): The sample is buffered at a pH of 9.5 with a borate in order to decrease hydrolysis of cyanates and organic nitrogen compounds and is then distilled into a solution of boric acid. The ammonia in the distillate is determined colorimetrically by Nesslerization at 425.0 nm by spectrometrically.   | UV-VIS spectrometry (Biochrom Libra S70 spectrophotometer) | [1]       |
| Cl <sup>-</sup>               | Chromatographic separations were performed at 30 °C with a Dionex IonPac AS20 analytical column (2 × 250 mm). In addition, guard column and cartridge using ultra-pure (UP) water obtained from Dionex. The gradient programme: 10 mM of KOH for 6 min; linear increase of the KOH concentration from 10 mM to 25 mM for 15 min; 25 mM of KOH for 4 min; linear increase of the KOH concentration from 25 mM to 40 mM for 5 min; 40 mM of KOH for 5 min; linear decrease of the KOH concentration from 40 mM to 10 mM for 2 min. A 75 µL-aliquot of the sample/standard solution was loaded into the eluent stream. Flow rate of 2.5 mL/min. | Ion chromatography (Dionex ICS-3000)                       | [2]       |
| Na, K                         | Direct analysis of seawater samples according to the EPA 200.5   | ICP-OES (Spectro, SpectroBlue)                             | [3]       |
| PO <sub>4</sub> <sup>-</sup>  | Ammonium molybdate solution acidified with H <sub>2</sub> SO <sub>4</sub> was added onto the extracted samples along with excess ascorbic acid. The formation of the green/blue color was observed after heating them in the water bath. Colorimetric measurements were taken both at 822 nm and 650 nm for the purpose of comparison.   | UV-VIS spectrometry (Biochrom Libra S70 spectrophotometer) | [4]       |

**Table S2:** Chemical properties of seawater as a real environmental media (N:3, SW: seawater, ND: not detected).

| Chemical Property         | Results |           |
|---------------------------|---------|-----------|
|                           | 1% SW   | 100% SW   |
| pH                        | 8.0±0.9 | 8.3±0.8   |
| Na (mg/L)                 | 69±3    | 6693±535  |
| K (mg/L)                  | ND      | 231±9     |
| NO <sub>3</sub> (mg/L)    | ND      | 0.26±0.02 |
| NO <sub>2</sub> (mg/L)    | ND      | ND        |
| NH <sub>3</sub> -N (mg/L) | ND      | 0.92±0.06 |
| SO <sub>4</sub> (mg/L)    | 24±2    | 2283±190  |
| PO <sub>4</sub> (mg/L)    | ND      | ND        |
| Cl <sup>-</sup> (g/L)     | ND      | 15.9±0.6  |

## References

- [1] APHA. American Public Health Association (2017). Standard methods for the examination of water and waste water. 23rd Edition, American Public Health Association, American Water Works Association, Water Environment Federation.
- [2] A. Baysal, H. Baltaci, N. Ozbek, O. Destanoglu, G. S. Ustabasi and G. Gumus (2017) Chemical characterization of surface snow in Istanbul (NW Turkey) and their association with atmospheric circulations, *Environ. Monit. Assess.* **189(275)**, 1-20.
- [3] EPA Method 200.5, Determination of trace elements in drinking water by axially viewed inductively coupled plasma-atomic emission spectrometry
- [4] EPA Method 365.3: Phosphorous, all forms (colorimetric, ascorbic acid, two reagent)