Electronic Supplementary Material (ESI) for Environmental Science: Nano.

Effects of Dysprosium Oxide Nanoparticles on *Escherichia coli*

N. M. Anaya [a], F. Solomon [a] and V. Oyanedel-Craver [a]

Supplemental information

Conditions and toxicity tests

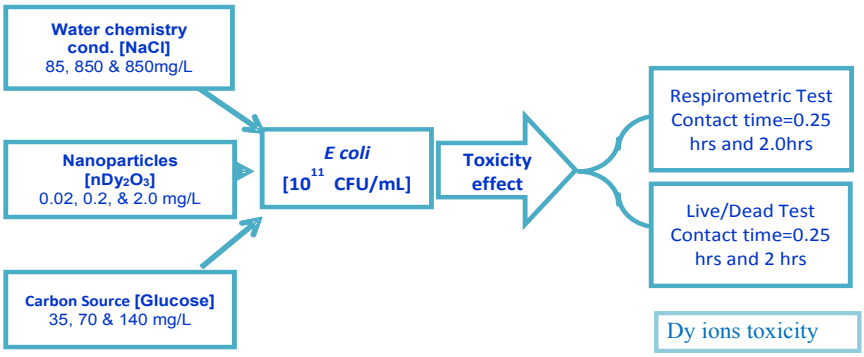

Figure S1: Conditions and toxicity tests analyzed in this study

Respirometric Plate Map

The various sections, labelled within the microplate, represent the quality control/quality assurance (QC/QA) measures implemented in each microplate experiment constructed. Sections of the microplate, e.g., nDy_2O_3 blank, bacteria blank and background correction, represent sections to detect false positives, since no coloration should develop in these wells during the testing period. No coloration in the nDy_2O_3 blank section indicates no reduction interactions between nDy_2O_3 and the tetrazolium dye that would produce colour. The Bacteria Blank section should remain colourless; because there is no glucose present therefore electron transfer is not possible. To account for background absorbance of nDy_2O_3, the Background Correction section was subtracted from the Experiment section; and it also served as a secondary control to further confirm that experimental conditions had no reducing effect on the tetrazolium dye without the presence of bacteria. Lastly, the Reference condition contained no nDy_2O_3 and was the experimental control against which all experimental values were compared.

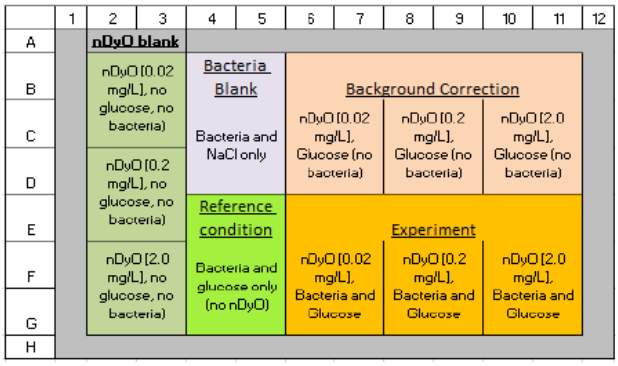

Figure S2: Respirometric plate map used to conduct the nDy_2O_3 toxicity experiments. Each plate tested one water chemistry condition and one concentration of glucose while concentration of nDy2O3 were varied

Respirometric results for 8,500mg/L NaCl and 70mg/L of glucose

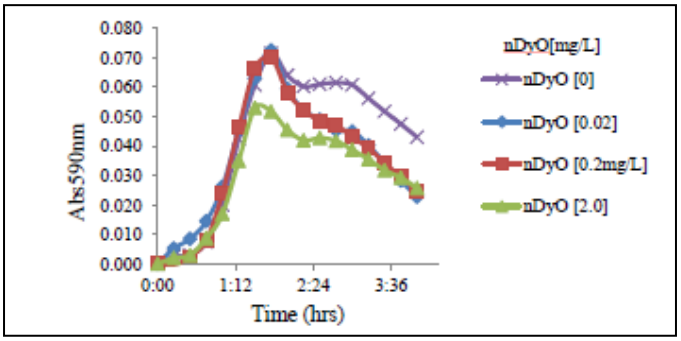

Figure S3: nDy2O3 toxicity on E. coli at 8,500 mg/l of NaCl

Statistical Analysis

Type III Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
NaCl	1	270	8.44	0.0040
Glucose	2	270	5.00	0.0074
NPN	2	270	14.95	<.0001
NaCl*Glucose	2	270	2.90	0.0566
Glucose*NPN	4	270	1.95	0.1029
NaCl*NPN	2	270	4.28	0.0148
NaCl*Glucose*NPN	4	270	0.92	0.4508

Figure S4: Variability analysis for Respirometric tests for the toxicity of nDy2O3 in two water chemistry conditions (85 and 850mg/L) using SAS