

## SUPPLEMENTARY INFORMATION

### **Titanium dioxide nanoparticles strongly impact soil microbial function by affecting archaeal nitrifiers**

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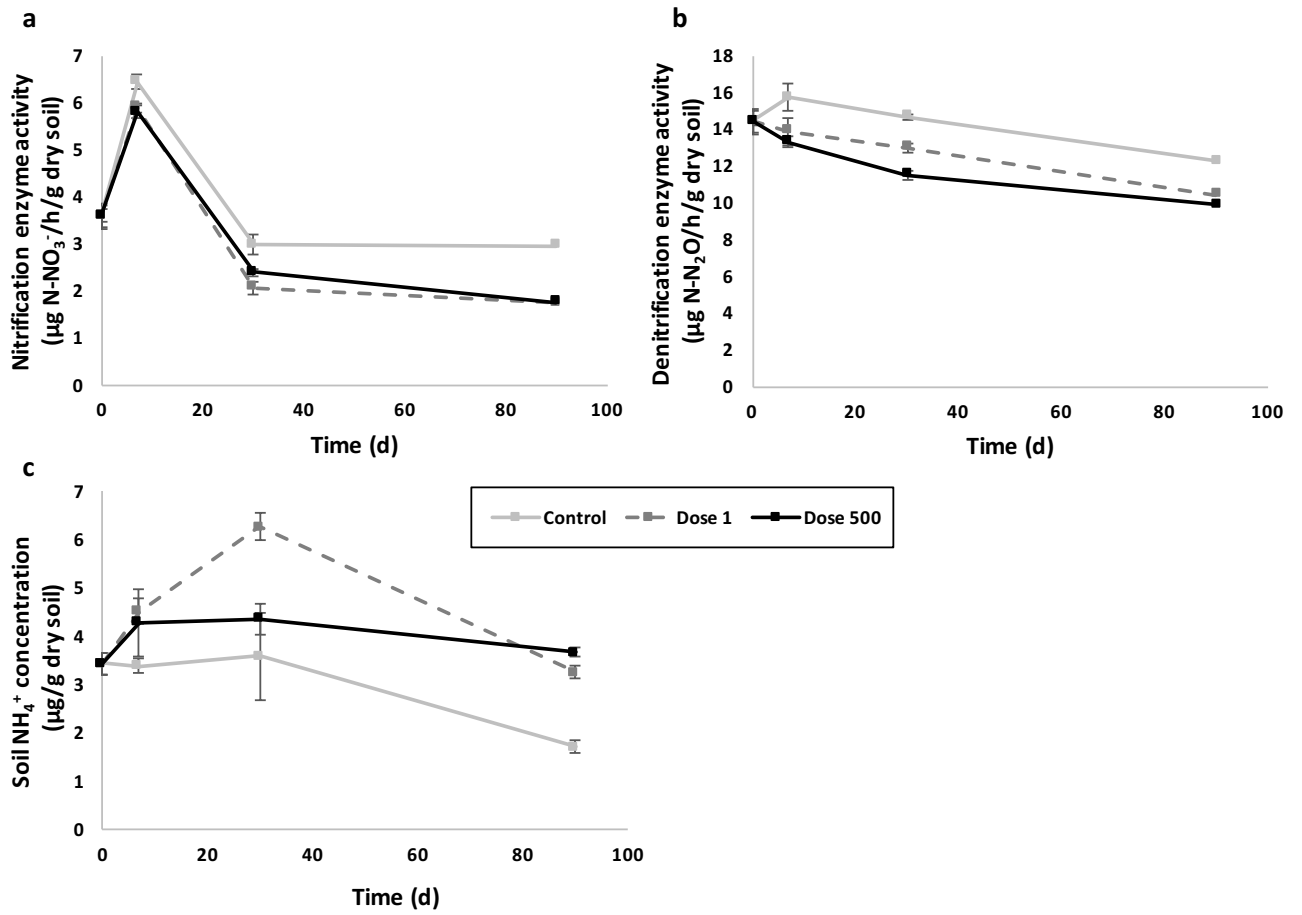


Figure S1: Dynamics over time of: a) NEA, b) DEA and c) soil  $\text{NH}_4^+$  concentration in the control (grey line), Dose 1  $\text{mg kg}^{-1}$  (dash line) and Dose 500  $\text{mg kg}^{-1}$  (black line) of  $\text{TiO}_2$  – NPs treatments.

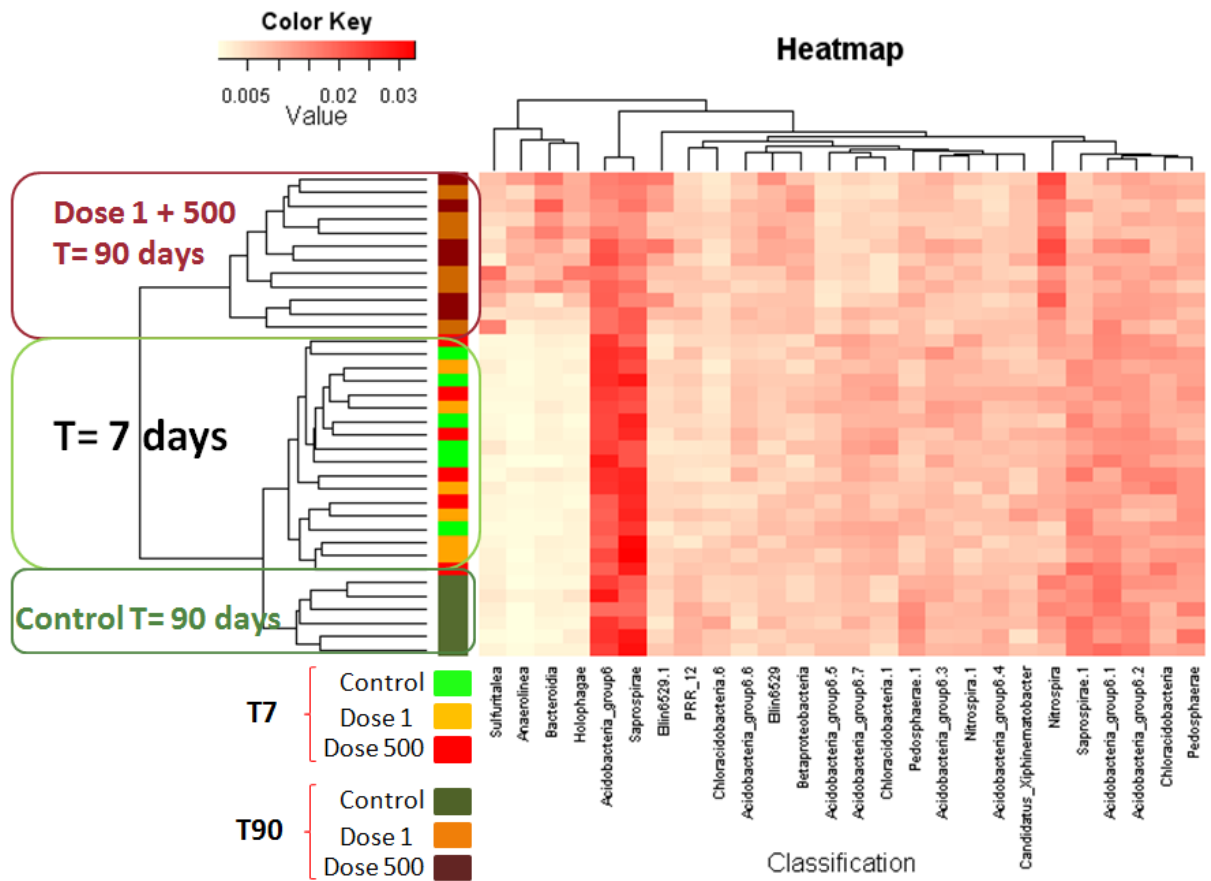


Figure S2 Relative abundance of bacterial OTUs in function of the different TiO<sub>2</sub>-NPs concentrations and duration of incubation. The heatmap represents the proportions of OTUs at the genus level.

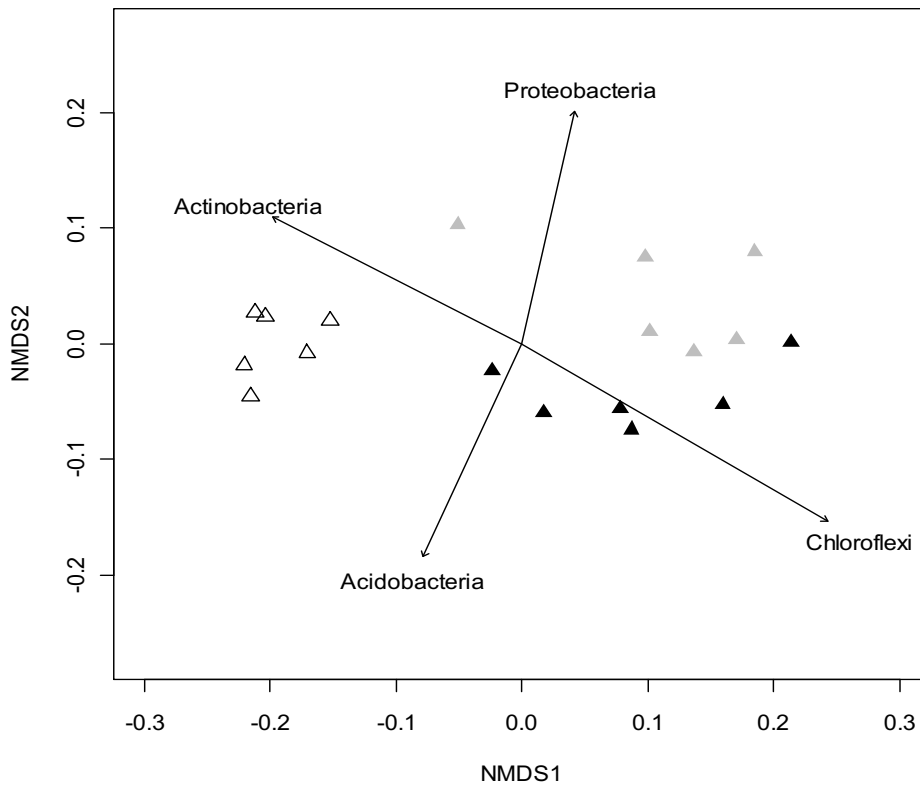


Figure S3 Nonmetric multidimensional scaling (NMDS) of the bacterial community structure after 90 days of exposure to TiO<sub>2</sub>-NPs (control: white triangle; Dose 1: grey triangle; Dose 500: black triangle). Significant correlation between NMDS axis and bacterial phyla relative abundance, based on a post hoc permutation test (n = 999), are represented as arrows. The final stress for NMDS analysis was 0.06.

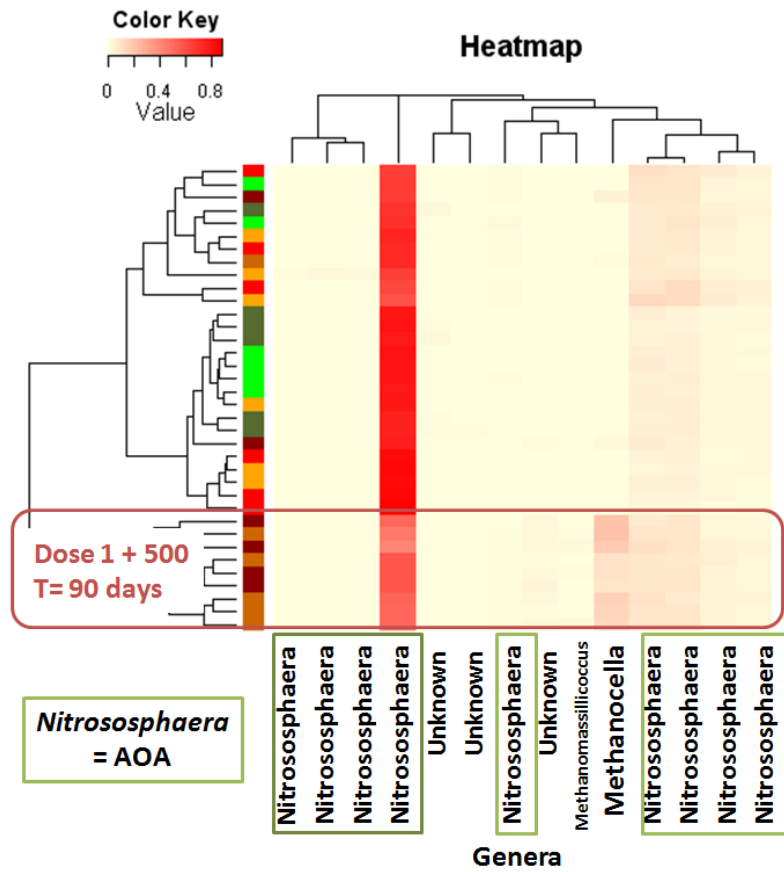


Figure S4 Relative abundance of archaeal genera in function of the different TiO<sub>2</sub>-NPs concentrations and duration of incubation. The heatmap represents the proportions of OTUs at the genus level. See color legend on Figure S1.

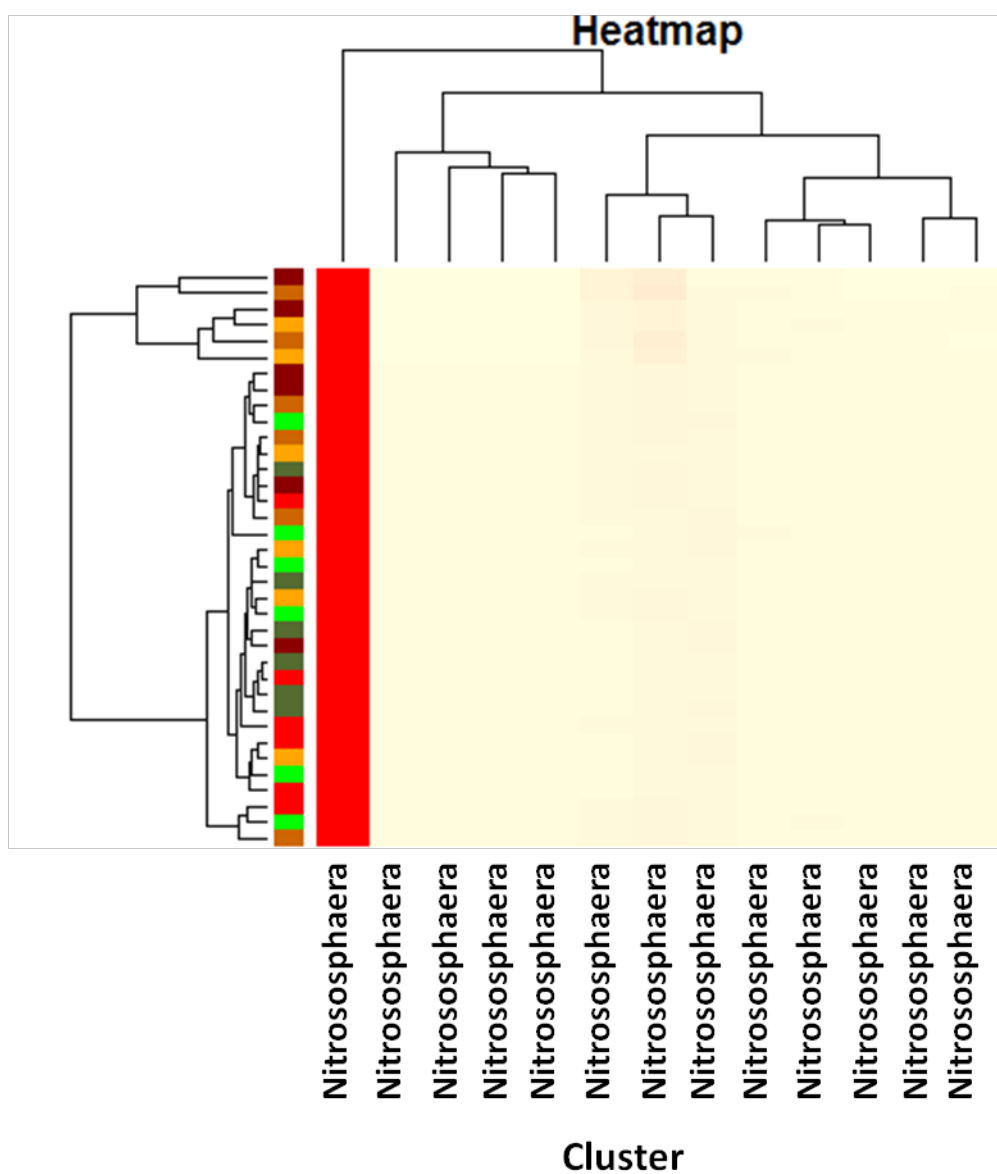


Figure S5 Relative abundance of AOA OTUs in function of the different TiO<sub>2</sub>-NPs concentrations and duration of incubation. The heatmap represents the proportions of the different AOA clusters. See color legend on Figure S1.