

Supplementary

Dissolution of Silver Nanoparticles in Stratified Estuarine Mesocosms and Silver Accumulation in a Simple Planktonic Freshwater Trophic Chain

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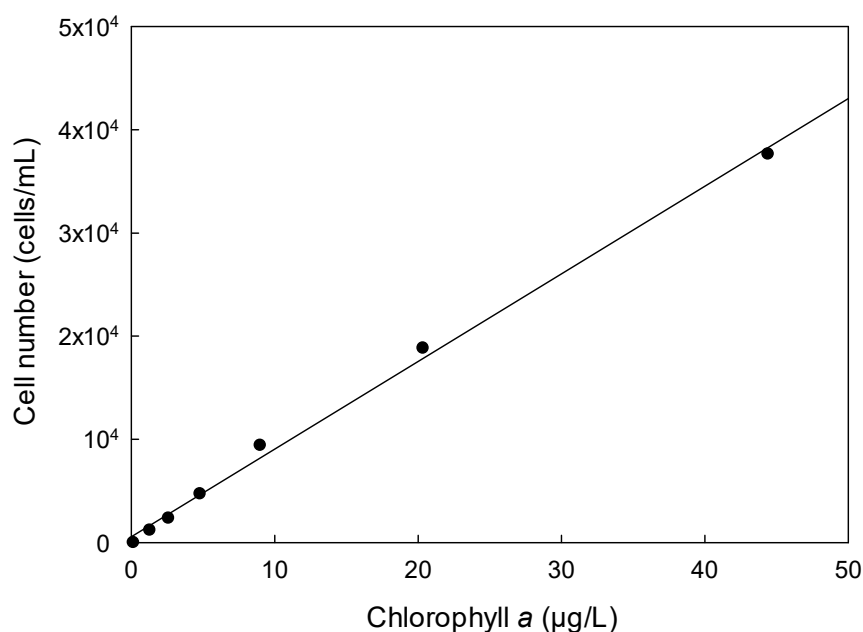


Figure S1. Relationship between Chlorophyll *a* concentration and *Chlamydomonas reinhardtii* cell number in mesocosm 1 (control) surface water.

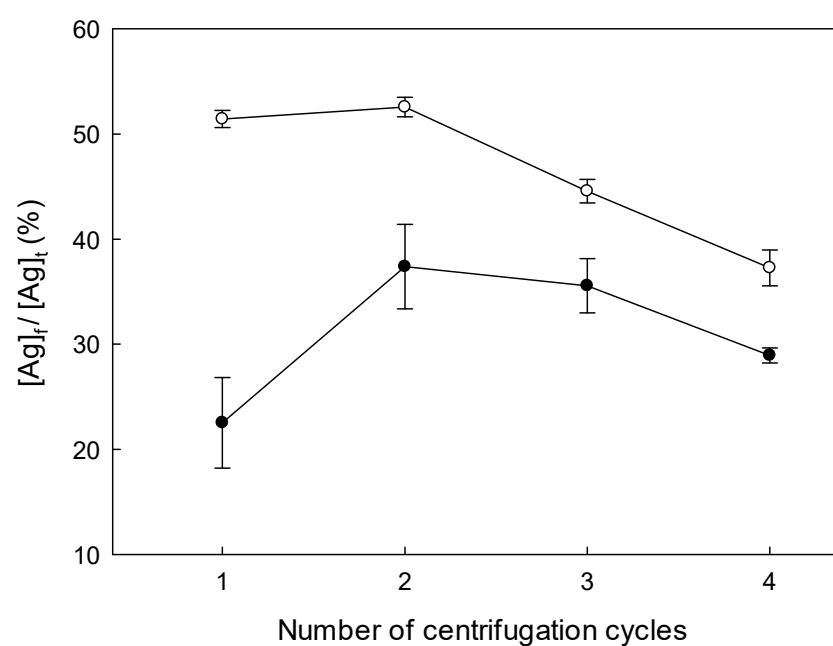


Figure S2. Mean proportion of silver in the ultrafiltrate ($[Ag]_f$) measured for up to 4 centrifugation cycles at total silver ($[Ag]_t$) concentration of 85.8 (●) and 145 ng/L (○) with 4.5 mL at 3700× g for 20 min. Error bars represent the standard deviation of three replicates.

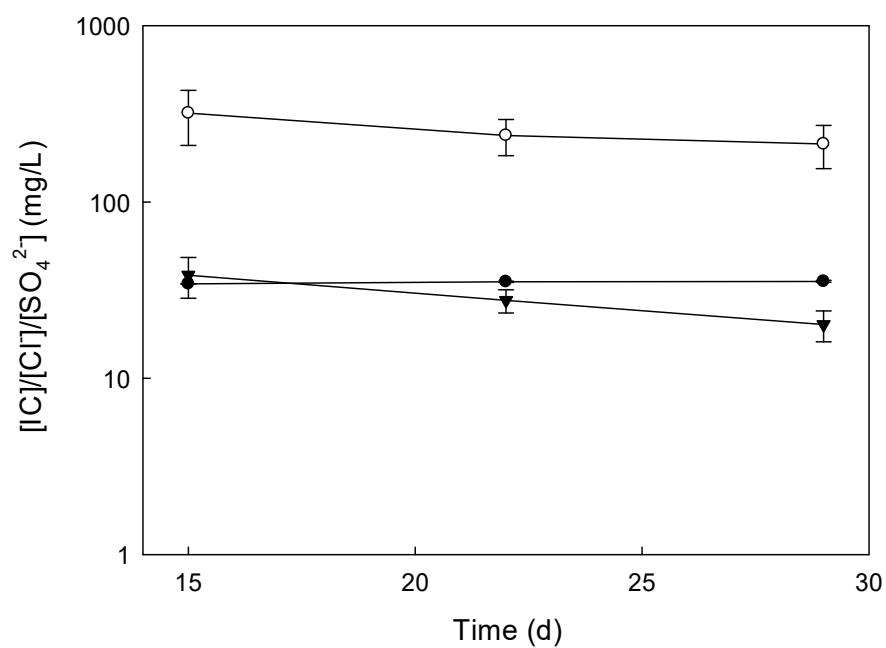


Figure S3. Mean concentrations of inorganic carbon (IC, ●), Cl^- (○) and SO_4^{2-} (▼) in the three mesocosms as a function of time. Error bars represent the standard deviation of concentrations (IC, Cl^- , SO_4^{2-}) from mesocosms 1, 2 and 3 ($n = 3$; one measurement per mesocosm).

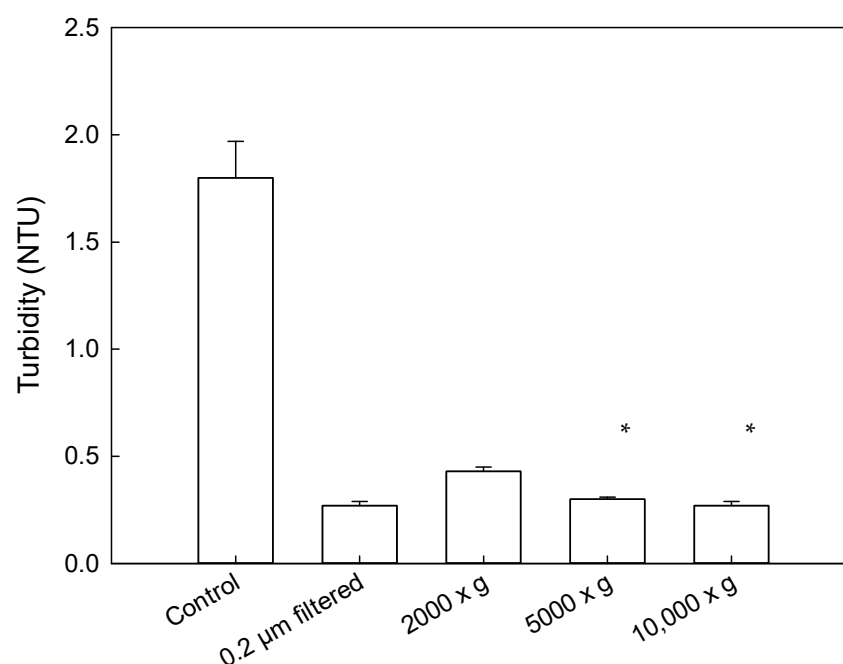


Figure S4. Turbidity of supernatant from water of mesocosms 1, 2 and 3 after centrifugation (15 min) or filtration (0.2 µm polycarbonate filter). Turbidity is expressed as Nephelometric turbidity units (NTU). Error bars represent the standard deviation of turbidity measurements on samples from the three mesocosms; one sample was tested from each mesocosm. Asterisks (*) indicate there was no significant difference with respect to the 0.2 µm filtered solution (Student's t-test, $p > 0.05$).

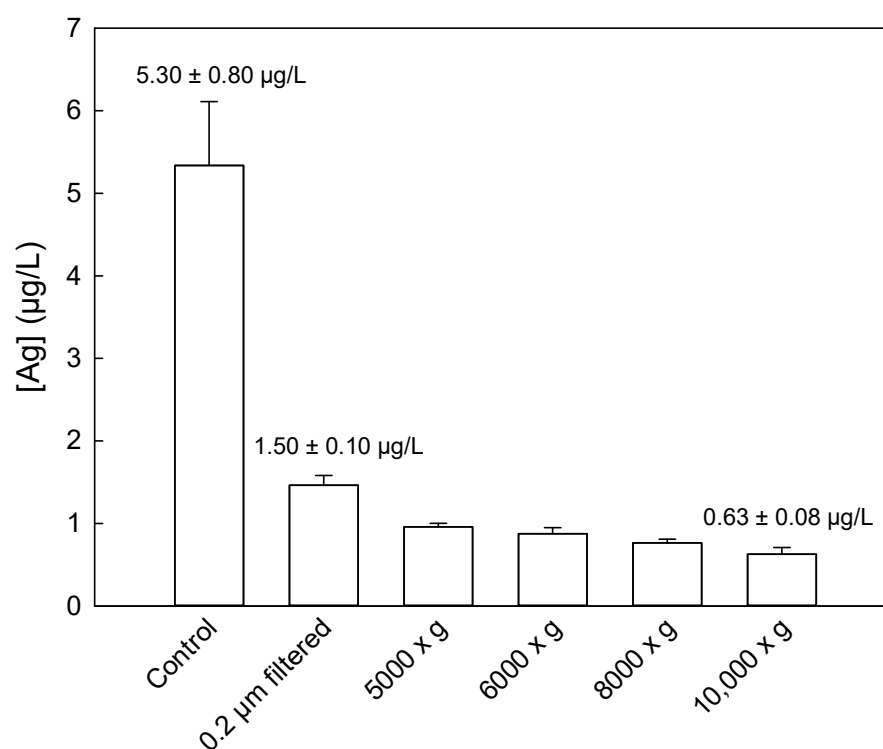


Figure S5. Ag concentrations in mesocosms 2 and 3 at the beginning of the experiments (no filtration or centrifugation; labeled "control"), compared with Ag concentrations in the filtrate after passing through 0.2 µm polycarbonate filters, as well as Ag concentrations in the supernatants after centrifugation for 15 min at different speeds (g -values). Error bars represent the standard deviation of Ag concentrations from mesocosms 2 and 3 ($n = 2$; one sample per mesocosm).

Table S1. Composition of culture medium (MHSM-1). All reagents were of analytical grade or better.

Stock solution (filtered, 0.2 µm)	Product	Final concentration (M)	Supplier
MOPS (100 mM)	MOPS	1.00×10^{-3}	Sigma Aldrich
Ammonium #2	NH ₄ NO ₃	9.37×10^{-4}	Fisher
	MgSO ₄ , 7 H ₂ O	8.12×10^{-5}	Caledon
	Ca(NO ₃) ₂ , 4 H ₂ O	6.80×10^{-5}	Sigma Aldrich
Phosphate #2	KH ₂ PO ₄	5.44×10^{-5}	EMD
	K ₂ HPO ₄	8.27×10^{-5}	EMD
KNO ₃ (1 M)	KNO ₃	4.00×10^{-3}	EMD
NaOH (1 M)	NaOH	4.25×10^{-3}	Fisher
AAP (algal assay procedure)	H ₃ BO ₃	3.01×10^{-6}	Sigma Aldrich
	MnCl ₂ , 4 H ₂ O	2.10×10^{-6}	Fisher
	FeCl ₃ , 6 H ₂ O	5.92×10^{-7}	Sigma Aldrich
	Na ₂ EDTA, 2 H ₂ O	8.02×10^{-7}	Sigma Aldrich
	Zn (1 g/L)	2.43×10^{-8}	SCP Science
	Co (1 g/L)	1.09×10^{-8}	SCP Science
	Mo (1 g/L)	3.00×10^{-8}	SCP Science
	Cu (1 g/L)	7.03×10^{-11}	SCP Science