SUPPLEMENTARY INFORMATION

CYANOBACTERIAL PROMOTED ENRICHMENT OF RARE EARTH ELEMENTS EUROPIUM, SAMARIUM AND NEODYMIUM AND INTRACELLULAR EUROPIUM PARTICLE FORMATION

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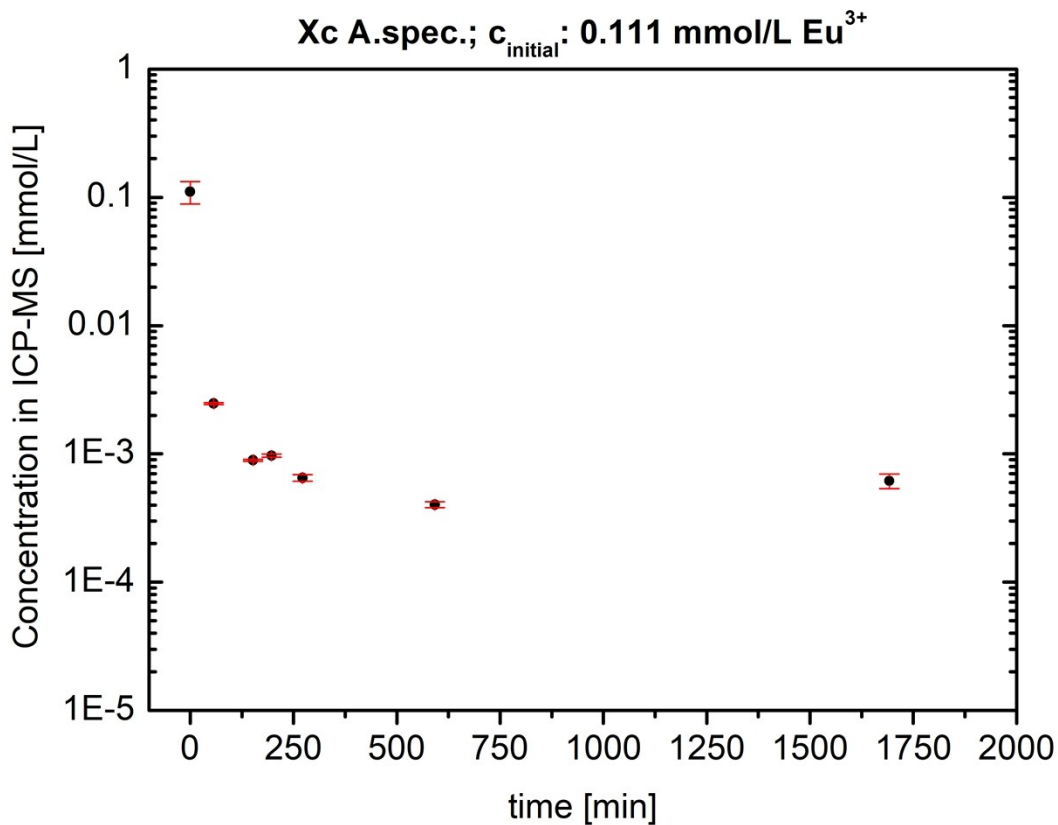ICP-MS results including errors for the time dependent decrease of **Eu³⁺** concentration ($c_{initial}$ = 0.111 mM Eu³⁺) present in supernatant after incubation of *Anabaena* spec.
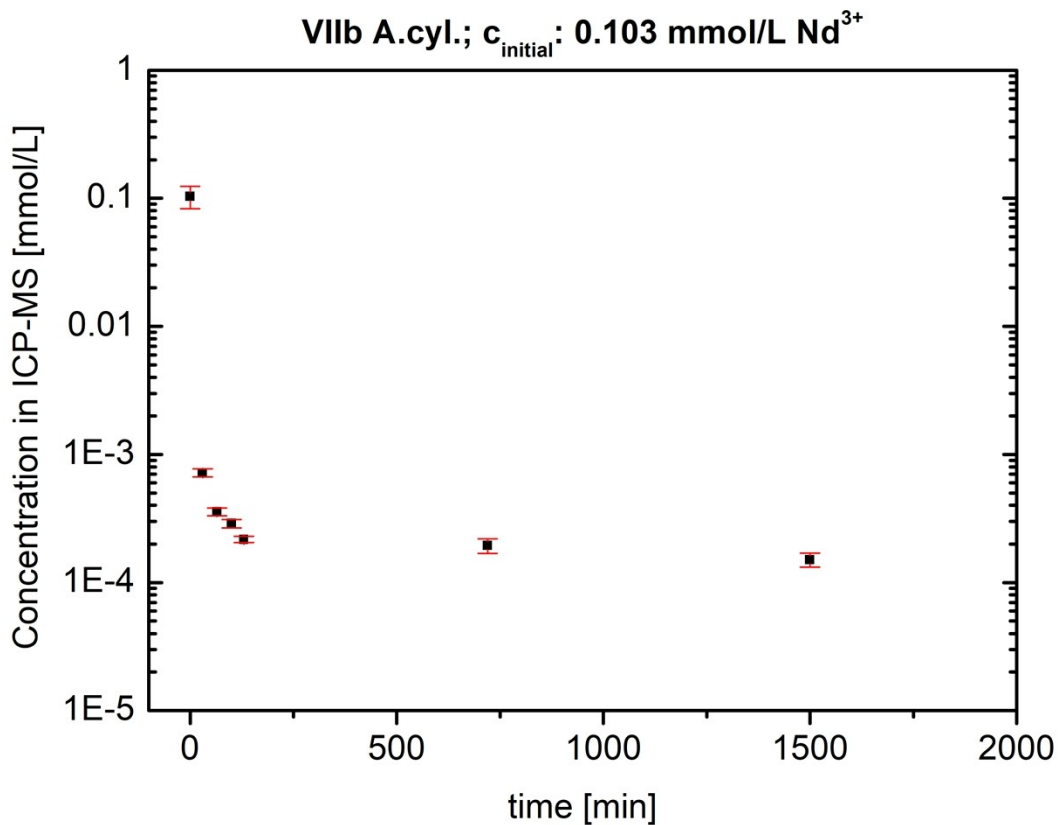

Figure S1: Time dependent decrease of Eu^{3+} concentration present in supernatant after incubation of *Anabaena* spec. with an overall concentration of 0.111 mM (error bars highlighted in red for clarity). First data point at 0 minutes means the initial REE^{3+} concentration of the added stock solution in appropriate dilution without biomass ($c_{initial}$).

Table S1: ICP-MS data for the time dependent decrease of Eu^{3+} ($c_{initial}$ = 0.111 mM) present in supernatant after incubation of *Anabaena* spec.

t (min)	c [mmol/L]	RSD [mmol/L]	Analyte
0	0.111	2.21E-2	**Eu**
57	2.47E-3	4.53E-5	
152	8.93E-4	1.40E-5	
197	9.70E-4	2.63E-5	
272	6.51E-4	3.79E-5	
592	4.02E-4	2.08E-5	
1692	6.16E-4	8.09E-5	

ICP-MS results including errors for the time dependent decrease of **Nd³⁺** concentration ($c_{initial}$ = 0.103 mM Nd³⁺) present in supernatant after incubation of *Anabaena cylindrical*.

Figure S2: Time dependent decrease of Nd^{3+} concentration present in supernatant after incubation of *Anabaena cylindrica* with an overall concentration of 0.103 mM (error bars highlighted in red for clarity). First data point at 0 minutes means the initial REE^{3+} concentration of the added stock solution in appropriate dilution without biomass ($c_{initial}$).

Table S2: ICP-MS data for the time dependent decrease of Nd^{3+} ($c_{initial}$ = 0.103 mM) present in supernatant after incubation of *Anabaena cylindrica*.

t (min)	c [mmol/L]	RSD [mmol/L]	Analyte
0	0.103	2.07E-2	**Nd**
30	7.19E-4	5.28E-5	
65	3.56E-4	2.50E-5	
100	2.89E-4	2.22E-5	
130	2.17E-4	1.27E-5	
720	1.94E-4	2.53E-5	
1500	1.51E-4	1.90E-5	

ICP-MS results including errors for the time dependent decrease of **Sm³⁺** concentration ($c_{initial}$ = 0.139 mM Sm³⁺) present in supernatant after incubation of *Anabaena cylindrical*.
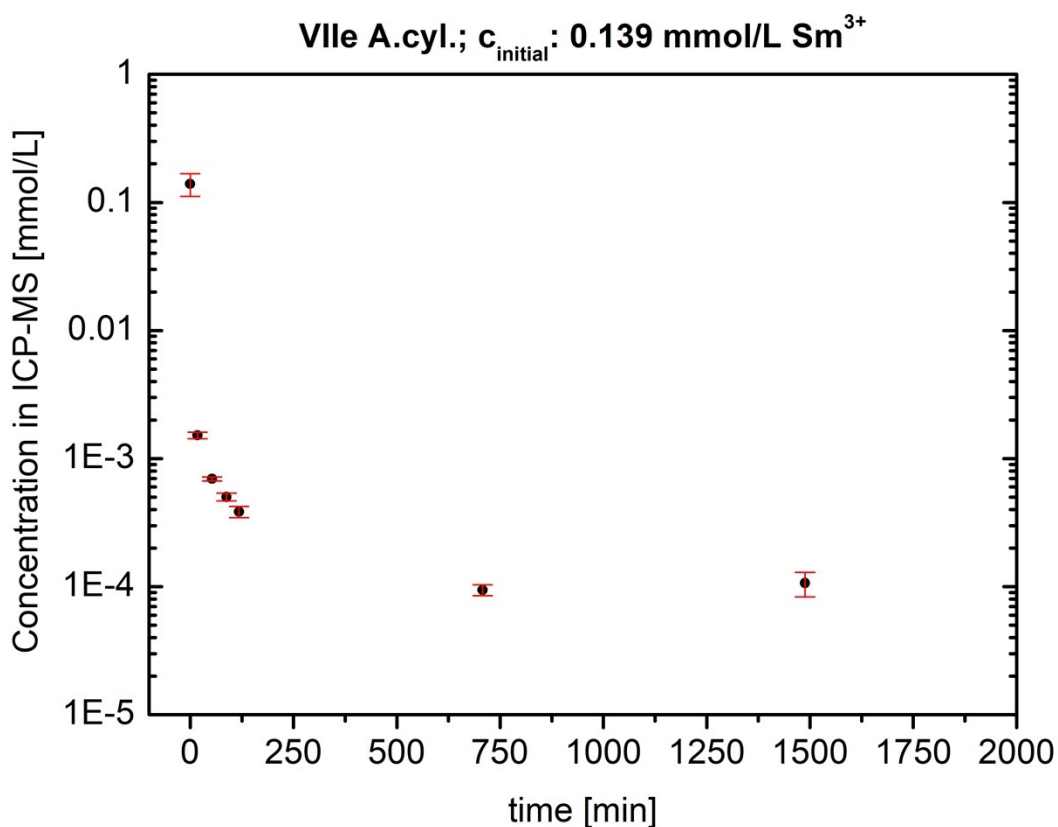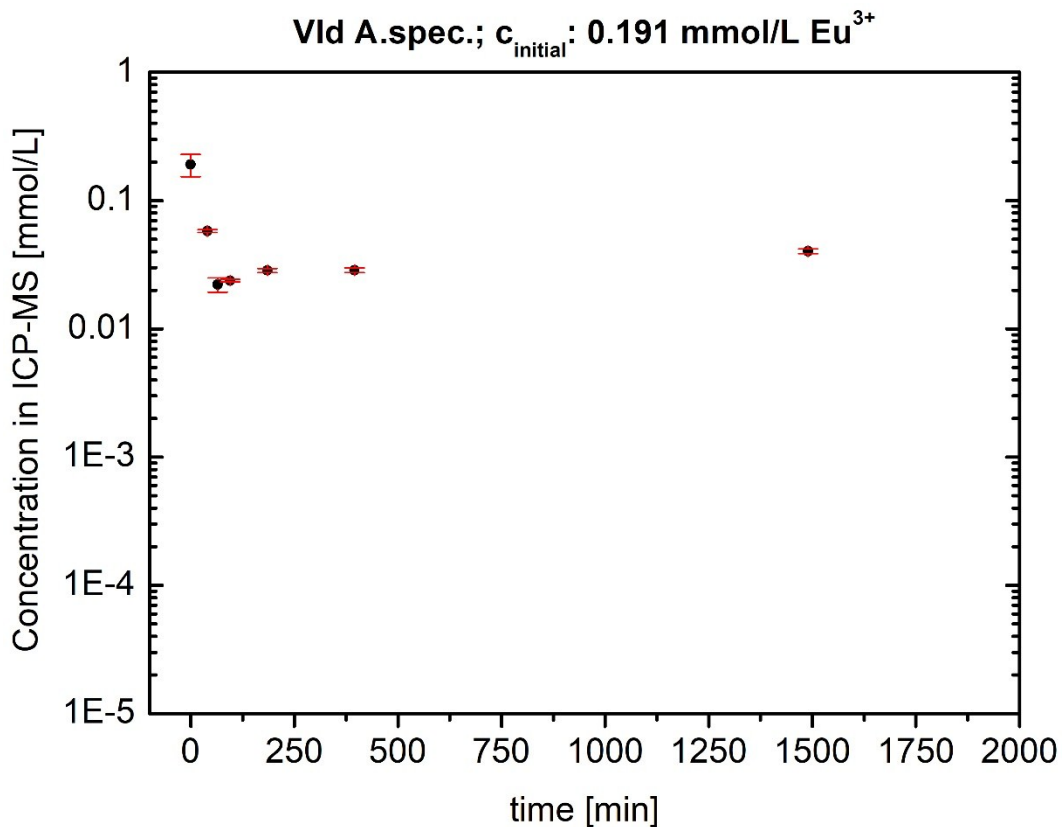

Figure S3: Time dependent decrease of Sm^{3+} concentration present in supernatant after incubation of *Anabaena cylindrica* with an overall concentration of 0.139 mM (error bars highlighted in red for clarity). First data point at 0 min means the initial REE^{3+} concentration of the added stock solution in appropriate dilution without biomass ($c_{initial}$).

Table S3: ICP-MS data for the time dependent decrease of Sm^{3+} ($c_{initial}$ = 0.139 mM) present in supernatant after incubation of *Anabaena cylindrica*.

t (min)	c [mmol/L]	RSD [mmol/L]	Analyte
0	0.139	2.79E-2	**Sm**
18	1.52E-3	9.02E-5	
53	6.95E-4	2.40E-5	
88	5.01E-4	3.45E-5	
118	3.84E-4	3.86E-5	
708	9.42E-5	9.09E-6	
1488	1.06E-4	2.31E-5	

ICP-MS results including errors for the time dependent decrease of **Eu³⁺** concentration ($c_{initial}$ = 0.191 mM Eu^{3+}) present in supernatant after incubation of *Anabaena* spec.

Figure S4: Time dependent decrease of Eu^{3+} concentration present in supernatant after incubation of *Anabaena* spec. with an overall concentration of 0.191 mM Eu^{3+} (error bars highlighted in red for clarity). First data point at 0 minutes means the initial REE^{3+} concentration of the added stock solution in appropriate dilution without biomass ($c_{initial}$). The series differs in its growth condition compared to the 0.111 mM Eu^{3+}, as this one was starving, meaning grown without any additional nutrients.

Table S4: ICP-MS data for the time dependent decrease of Eu^{3+} ($c_{initial}$ = 0.191 mM) present in supernatant after incubation of *Anabaena* spec.

t (min)	c [mmol/L]	RSD [mmol/L]	Analyte
0	0.191	3.83E-2	Eu
40	5.79E-2	1.47E-3	
65	2.21E-2	2.81E-3	
95	2.37 E-2	5.86E-4	
185	2.85E-2	9.73E-4	
395	2.87E-2	1.21 E-3	
1490	4.03 E-2	1.68 E-3	