

**Nature and Value of Freely-Dissolved EPS Ecosystem Services: Insight into Molecular
Coupling Mechanisms for Regulating Metal Toxicity**

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Table S1. Fitted parameters related to the extra- and intracellular distribution of metals in the absence and presence of freely dissolved EPS. Here, the distribution coefficient K_d (L/10⁶ cells) was calculated as the ratio of q versus C_w for each datum.

Metals	EPS manipulation	<i>n</i>	K_F	K_d	R^2
Cu ²⁺	No EPS	0.99	0.11	0.10–0.11	0.97
	EPS	0.93	0.04	0.03–0.05	0.99
Cd ²⁺	No EPS	0.81	0.26	0.08–0.15	0.98
	EPS	0.71	0.35	0.03	0.96

Table S2. Fitted parameters related to the coordination of metal with freely dissolved EPS on the basis of fluorescence microtitrimetry, calculated by equation 2 in the Materials and Methods section (n : number of binding sites; $\log K_A$: association constant; p : probability; R^2 : correlation coefficient).

Metals	EPS	n	$\log K_A$	p	R^2
Ca ²⁺	freely dissolved EPS	0.91	1.39	0.03	0.93
Zn ²⁺	freely dissolved EPS	0.94	2.16	<0.01	0.94
Al ³⁺	freely dissolved EPS	0.95	2.78	<0.01	0.97
Cd ²⁺	freely dissolved EPS	0.99	3.34	0.02	0.92
Cu ²⁺	freely dissolved EPS	0.93	3.70	<0.01	0.98
Cr ³⁺	freely dissolved EPS	0.98	4.15	<0.01	0.98