

1 **Table S1.** ETAAS operating conditions and graphite furnace programs<sup>a</sup> for the  
 2 determination of Cd, Co, Cr, Cu, Mn, Ni, and Pb in acidified protein fractions  
 3 (OFFGEL fractions) from seawater.

	Cd	Co	Cr	Cu	Mn	Ni	Pb
Operating conditions							
Wavelength / nm	228.8	242.5	357.9	324.8	249.5	232.0	283.3
Slit width / nm	0.7	0.2	0.7	0.7	0.2	0.2	0.7
Injection volume / $\mu\text{L}$	20	20	20	20	20	20	20
Background correction <sup>b</sup>	D <sub>2</sub>	D <sub>2</sub>	ZEBC	---	D <sub>2</sub>	D <sub>2</sub>	D <sub>2</sub>

<sup>a</sup> Pyrolytic coated graphite tubes with L'vov platforms, integrated absorbance measurement

<sup>b</sup> D<sub>2</sub>, Deuterium arc background correction system; ZEBC, Zeeman effect background correction system

Graphite furnace temperature programs<sup>c</sup>

	Step	Temperature / °C	Ramp / s	Hold / s	Ar flow rate / ml min <sup>-1</sup>
Cd	Drying	150	15	20	300
	Pyrolysis	600	10	15	300
	Atomization	1800	0	2	0 (READ)
	Cleaning	2200	2	3	300
Co	Drying 1	110	1	20	300
	Drying 2	150	5	30	300
	Pyrolysis	1500	10	20	300
	Atomization	2200	0	5	0 (READ)
	Cleaning	2400	1	2	300
Cr	Drying 1	110	1	20	250

	Drying 2	150	5	30	250
	Pyrolysis	1600	10	30	250
	Atomisation	2400	0	3	0 (READ)
	Cleaning	2450	1	3	250
Cu	Drying	110	10	20	300
	Pyrolysis	1400	10	20	300
	Atomization	2200	0	5	0 (READ)
	Cleaning	2400	1	3	300
Mn	Drying 1	110	1	20	300
	Drying 2	150	5	30	300
	Pyrolysis	1400	10	20	300
	Atomization	2000	0	5	0 (READ)
	Cleaning	2400	1	2	300
Ni	Drying 1	110	1	20	300
	Drying 2	150	5	30	300
	Pyrolysis	1600	10	20	300
	Atomization	2400	0	5	0 (READ)
	Cleaning	2500	1	2	300
Pb	Drying	150	15	20	300
	Pyrolysis	800	15	10	300
	Atomization	1800	0	3	0 (READ)
	Cleaning	2200	2	3	300

<sup>c</sup> Mg(NO<sub>3</sub>)<sub>2</sub> / Pd(NO<sub>3</sub>)<sub>2</sub> (25/62.5 mg L<sup>-1</sup>) as a chemical modifier

5 **Table S2.** ICP–OES operating conditions for the determination of Cu, Fe, and Zn in  
 6 acidified protein fractions (OFFGEL fractions) from seawater.

General	Radiofrequency power / W	1300
	Sample uptake rate / mL min <sup>-1</sup>	1.5
	Stabilization delay / s	45
	Number of replicates	4
	Integration time / s	5
	Nebulizer type	Cross flow
	Axial view	
Gas flows / L min <sup>-1</sup>	Plasma	15.0
	Auxiliary	0.5
	Nebulizer	0.8
Detection wavelengths / nm	Cu	327.393
	Fe	238.205
	Zn	213.857