



Supplement of

Volcanic ash leaching alters the trace metal distribution within the coral holobiont of *Stylophora pistillata*

Frank Förster et al.

Correspondence to: Frank Förster (frank.foerster@unige.ch)

The copyright of individual parts of the supplement might differ from the article licence.

Table S1: Quality control on Seawater Certified Reference Material (CRM) a) CASS-6, and b) SAFe D1_479. Measured values are compared to certified consensus values to assess analytical accuracy.

a) CASS-6		Consensus value		Measured values					
Element	Unit			External Calibration			Isotope Dilution		
		Mean	SD	Mean	SD	Recovery [%]	Mean	SD	Recovery [%]
V	ug/L	0.5000	0.1200	0.5564	0.0064	89.87	NA	NA	NA
Mn	ug/L	2.2200	0.1200	2.1759	0.0355	102.03	NA	NA	NA
Fe	ug/L	1.5600	0.1200	1.3516	0.0168	115.42	1.5564	0.0148	100.23
Co	ug/L	0.0672	0.0052	0.0663	0.0021	101.29	NA	NA	NA
Ni	ug/L	0.4180	0.0400	0.4360	0.0074	95.88	0.3913	0.0036	106.81
Cu	ug/L	0.5300	0.0320	0.5177	0.0065	102.38	0.4949	0.0171	107.08
Zn	ug/L	1.2700	0.1800	1.1780	0.0126	107.81	NA	NA	NA
Cd	ug/L	0.0217	0.0018	0.0232	0.0002	93.48	0.0195	0.0005	111.35
Pb	ug/L	0.0106	0.0040	0.0110	0.0003	96.18	NA	NA	NA

b) SAFe D1_479		Consensus value		Measured values					
Element	Unit			External Calibration			Isotope Dilution		
		Mean	SD	Mean	SD	Recovery [%]	Mean	SD	Recovery [%]
V	nmol/L	NA	NA	NA	NA	NA	NA	NA	NA
Mn	nmol/L	NA	NA	NA	NA	NA	NA	NA	NA
Fe	nmol/L	0.6900	0.0400	0.6061	0.0524	113.84	0.6914	0.0565	99.79
Co	nmol/L	0.0460	0.0050	0.0465	0.0051	98.94	NA	NA	NA
Ni	nmol/L	8.7900	0.2700	8.7595	0.1493	100.35	8.8692	0.1491	99.11
Cu	nmol/L	2.3300	0.1100	2.1715	0.1058	107.30	2.1715	0.1542	107.30
Zn	nmol/L	7.5900	0.3600	7.5864	0.3518	100.05	NA	NA	NA
Cd	nmol/L	1.0160	0.0320	1.0298	0.0414	98.66	0.9744	0.0265	104.27
Pb	nmol/L	0.0290	0.0030	0.0284	0.0029	102.19	NA	NA	NA

Table S2: Input parameters for the compartment model, as described in Sect. 2.2.1.

Element	Seawater blank	Estimated conc. in tank after 24 h*	A ₀ (C _{24h} -C _{sw blank})	fitted k
	[nmol/L]	[nmol/L]	[nmol/L]	[nmol/L/min]
V	26.3621	26.3453	-0.0168	0.0001
Mn	1.0586	8.3515	7.2928	0.0085
Fe	12.2939	12.4799	0.1860	0.0038
Co	0.1512	0.1947	0.0435	0.0006
Ni	7.6575	7.7648	0.1073	0.0007
Cu	4.2123	5.3631	1.1508	0.3229
Zn	28.0962	39.4547	11.3585	0.4540
Cd	0.2478	0.2533	0.0054	0.0412
Pb	0.0554	0.0552	-0.0002	0.0144

*calculated from mg/kg ash values

Table S3: Isotope list and dwell times for elements analysed with LA-ICP-MS.

Element	Selected mass number	Dwell time [s]
Li	7	0.01
B	11	0.01
Na	23	0.01
Mg	25	0.01
V	51	0.03
Mn	55	0.03
Fe	56	0.03
Co	59	0.01
Ni	62	0.03
Cu	65	0.01
Zn	66	0.01
Sr	88	0.01
Cd	111	0.03
U	238	0.01

15

20

25

Table S4: Quality control on the Certified Reference Material JCP-1-NP for LA-ICP-MS analyses. Measured values are compared to certified consensus values and to published literature values to assess analytical accuracy and reproducibility.

Study	Parameter	El/Ca ratio														
		Li	B	Na	Mg	V	Mn	Fe	Co	Ni	Cu	Zn	Sr	Cd	Pb	U
This study	Number of meas.	44	41	43	43	38	40	43	40	41	40	44	44	19	43	45
	Median [μmol/mol]	9.40	418.70	18954.33	4309.77	0.55	3.18	67.93	0.58	0.57	0.87	1.38	8670.76	0.03	0.16	1.11
	Average [μmol/mol]	9.42	416.65	18938.08	4297.86	0.56	3.27	68.54	0.59	0.58	0.87	1.43	8661.88	0.04	0.16	1.12
	2SD [μmol/mol]	0.77	55.10	1503.00	310.23	0.11	0.77	16.65	0.13	0.15	0.09	0.35	210.90	0.02	0.01	0.08
	2RSD [%]	8.14	13.23	7.94	7.22	19.20	23.56	24.29	21.71	25.81	10.68	24.34	2.43	58.04	9.04	6.81
	RSD [%]	4.07	6.61	3.97	3.61	9.60	11.78	12.15	10.86	12.91	5.34	12.17	1.22	29.02	4.52	3.40
Boer et al., 2022	Value [μmol/mol]	NA	428.06	NA	3558.90	0.48	1.93	111.39	NA	NA	1.10	NA	7653.30	0.08	0.13	1.03
	2SD [μmol/mol]	NA	15.21	NA	269.99	0.10	0.29	9.19	NA	NA	0.12	NA	193.06	0.01	0.01	0.03
McCormick et al., 2023	Value [μmol/mol]	NA	NA	NA	4723.29	NA	2.12	93.29	NA	NA	NA	1.61	8813.86	NA	0.16	1.05
	2SD [μmol/mol]	NA	NA	NA	457.09	NA	1.00	22.94	NA	NA	NA	0.31	349.54	NA	0.02	0.07
Jochum et al., 2019	Value [μmol/mol]	6.49	449.01	17849.52	3520.85	0.53	2.06	120.44	0.53	1.00	1.23	NA	7870.33	NA	0.15	1.11
	2SD [μmol/mol]	NA	66.66	4005.26	107.07	0.06	0.22	25.09	0.01	0.50	0.68	0.61	753.91	NA	0.02	0.13
MyStandards GmbH	Value [μmol/mol]	8.19	434.19	NA	3936.77	0.43	2.08	NA	NA	NA	0.99	1.97	8086.23	0.04	0.14	0.98
	2SD [μmol/mol]	2.75	44.81	NA	347.14	0.02	0.15	NA	NA	NA	0.02	0.01	229.60	0.01	0.00	0.06
Boer et al., 2022	Recovery [%]	NA	97.81	NA	121.10	114.09	164.28	60.98	NA	NA	79.47	NA	113.29	37.15	119.43	107.98
McCormick et al., 2023	Recovery [%]	NA	NA	NA	91.25	NA	149.66	72.82	NA	NA	NA	85.56	98.38	NA	103.54	105.30
Jochum et al., 2019	Recovery [%]	144.94	93.25	106.19	122.41	103.97	154.29	56.40	107.86	57.31	70.93	NA	110.17	NA	109.14	99.86
MyStandards GmbH	Recovery [%]	114.83	96.43	NA	109.47	127.71	152.94	NA	NA	NA	87.82	69.65	107.23	75.21	114.00	113.63
Mean recovery [%]		129.88	95.83	106.19	111.06	115.25	155.29	63.40	107.86	57.31	79.40	77.60	107.27	56.18	111.53	106.70
Mean deviation [%]		29.88	4.17	6.19	11.06	15.25	55.29	36.60	7.86	42.69	20.60	22.40	7.27	43.82	11.53	6.70

5

10

15

20

Table S5: Seawater background concentrations and modelled average trace metal concentrations [nmol L⁻¹] in coral culture tanks. The calculations and assumptions justifying the compartment model are described in Sect. 2.2.1.

Element	Seawater blank		Modelled average tank concentration	
	<i>Mean [nmol/L]</i>	<i>SD [nmol/L]</i>	<i>Mean [nmol/L]</i>	<i>SD [nmol/L]</i>
V	26.362	0.465	26.209	0.170
Mn	1.059	0.117	5.897	9.034
Fe	12.294	5.773	12.515	0.406
Co	0.151	0.072	0.334	0.206
Ni	7.657	1.268	8.041	0.452
Cu	4.212	0.609	4.233	0.038
Zn	28.096	4.638	28.231	0.247
Cd	0.248	0.015	0.249	0.002
Pb	0.055	0.003	0.055	0.000

- 5 Table S6: Trace metal concentrations [nmol L⁻¹] in 0.22 µm filtered Mediterranean seawater before and 1 h, 24 h, and 30 d after the addition of volcanic ash at a 1 g: 100 mL ratio (0.3 g ash: 30 mL. seawater). Data for the blanks and 1h ash leaching experiment is presented as mean concentration (n = 3) ± SD.

Element	Concentration [nmol/L]					
	0 h*	SD	1 h*	24 h*	SD	742 h*
V	26.362	0.465	22.632	24.348	1.260	19.510
Mn	1.059	0.117	435.303	876.200	69.344	1083.520
Fe	12.294	5.773	8.888	34.615	16.027	15.061
Co	0.151	0.072	3.122	5.373	0.567	8.767
Ni	7.657	1.268	12.781	20.535	0.392	26.990
Cu	4.212	0.609	185.077	142.304	25.657	111.751
Zn	28.096	4.638	1548.582	1391.114	191.942	1043.915
Cd	0.248	0.015	0.963	0.899	0.072	1.029
Pb	0.055	0.003	0.038	0.030	0.003	0.025

*Leaching duration

10 **Table S7a: Statistical results (Welch t-test) of tank effects on the metal concentrations in coral skeletons, host tissues and symbionts of the coral *Stylophora pistillata* under control conditions (tanks A and B).**

Element	Skeleton				Statistical test		
	[µg g ⁻¹ dry weight]				t-statistics	df	p-value
	tank A	SD	tank B	SD			
V	0.04	0.01	0.04	0.01	1.28	247.44	0.20
Mn	0.04	0.01	0.04	0.01	0.63	80.95	0.53
Fe	0.05	0.05	0.07	0.06	-2.36	206.57	0.02
Co	0.01	3.83E-03	0.01	3.10E-03	2.01	177.07	0.05
Ni	0.05	0.01	0.05	0.01	-0.22	261.74	0.82
Cu	0.10	0.04	0.12	0.05	-2.37	288.51	0.02
Zn	0.39	0.25	0.34	0.20	1.62	239.89	0.11
Cd	0.03	4.49E-03	0.03	3.60E-03	-0.76	6.38	0.47
Pb	0.05	0.01	0.05	0.02	-2.78	315.63	0.01

Element	Tissue				Statistical test		
	[µg g ⁻¹ dry weight]				t-statistics	df	p-value
	tank A	SD	tank B	SD			
V	1.93	1.47	1.29	0.57	0.58	2.65	0.61
Mn	1.00	0.07	1.01	0.11	0.27	2.82	0.81
Fe	35.70	7.92	48.62	1.02	-2.43	2.07	0.13
Co	0.28	0.04	0.32	0.05	-0.88	3.97	0.43
Ni	5.95	0.25	8.13	0.28	-6.64	4.00	2.67E-03
Cu	10.76	0.76	12.34	1.16	-1.51	2.30	0.25
Zn	115.69	3.39	135.79	23.58	-1.06	2.24	0.39
Cd	0.28	0.04	0.34	0.04	-1.37	3.80	0.25
Pb	0.24	0.02	0.26	0.02	-0.68	3.98	0.53

Element	Symbionts				Statistical test		
	[µg g ⁻¹ dry weight]				t-statistics	df	p-value
	tank A	SD	tank B	SD			
V	1.79	0.65	5.06	6.40	3.32	2.01	0.08
Mn	2.52	1.51	2.77	2.38	1.12	2.97	0.34
Fe	78.58	46.61	186.98	191.66	0.76	2.62	0.51
Co	0.21	0.16	0.60	0.62	0.45	2.86	0.69
Ni	3.98	2.95	18.29	20.81	0.24	2.65	0.83
Cu	18.53	13.45	73.11	82.82	0.42	2.46	0.71
Zn	298.78	201.06	747.88	829.84	0.94	2.21	0.44
Cd	NA	NA	3.30	3.69	NA	NA	NA
Pb	NA	NA	1.78	1.60	NA	NA	NA

Table S7b: Statistical results (Welch t-test) of the tank effect on the metal concentrations in coral skeletons, host tissues and symbionts of the coral *Stylophora pistillata* under ash-exposure conditions (tanks C and D).

Element	Skeleton [µg g ⁻¹ dry weight]				Statistical test		
	tank C	SD	tank D	SD	t-statistics	df	p-value
V	0.04	0.01	0.04	0.01	-0.34	324.49	0.73
Mn	0.10	0.03	0.07	0.03	7.04	315.37	1.22E-11
Fe	0.21	0.18	0.12	0.14	4.06	214.94	6.77E-05
Co	0.01	2.97E-03	0.01	2.83E-03	0.98	231.44	0.33
Ni	0.08	0.02	0.06	0.01	12.62	299.15	2.20E-16
Cu	0.12	0.06	0.10	0.05	2.50	299.43	0.01
Zn	0.53	0.34	0.40	0.29	3.87	317.55	1.31E-04
Cd	0.03	2.64E-03	0.03	7.88E-04	0.61	3.75	0.58
Pb	0.03	0.01	0.04	0.01	-1.94	336.59	0.05

Element	Tissue [µg g ⁻¹ dry weight]				Statistical test		
	tank C	SD	tank D	SD	t-statistics	df	p-value
V	0.88	0.37	2.41	1.09	-1.94	2.42	0.17
Mn	3.05	0.51	3.29	1.29	-0.36	2.59	0.75
Fe	72.05	11.81	72.38	28.35	-0.16	2.64	0.89
Co	0.35	0.03	0.42	0.14	-0.89	2.21	0.46
Ni	6.46	0.77	8.34	3.36	-0.83	2.24	0.48
Cu	11.16	2.06	17.90	6.99	-1.39	2.36	0.28
Zn	122.50	26.60	189.23	70.79	-1.34	2.48	0.29
Cd	0.28	0.08	NA	NA	NA	NA	NA
Pb	0.27	0.05	0.45	0.18	-1.49	2.28	0.26

Element	Symbionts [µg g ⁻¹ dry weight]				Statistical test		
	tank C	SD	tank D	SD	t-statistics	df	p-value
V	2.06	1.90	1.28	0.13	-0.78	1.04	0.57
Mn	5.07	4.99	1.87	0.74	-0.21	1.44	0.86
Fe	207.61	185.25	109.52	30.13	-0.45	1.26	0.72
Co	0.32	0.29	0.12	0.06	0.08	1.61	0.95
Ni	5.41	4.84	2.59	0.86	-0.32	1.37	0.79
Cu	31.75	33.44	10.42	4.91	-0.36	2.01	0.75
Zn	395.38	404.79	142.21	39.93	-0.40	1.33	0.75
Cd	0.52	0.00	NA	NA	NA	NA	NA
Pb	1.01	0.65	NA	NA	NA	NA	NA

Table S8: Statistical results of the effect of volcanic ash on the metal concentrations in coral skeletons, host tissues and symbionts of the coral *Stylophora pistillata*.

Normal distribution and homoskedasticity were assessed using Shapiro-Wilk test and Levene's test, respectively. Based on former and latter outcome, statistical tests (ANOVA, WMW and Welch) were performed. Differences between control and ash-exposed condition were termed statistically significant when $p \leq 0.05$ in all cases. Levels of significance are indicated as p -value > 0.05 (not significant), p -value ≤ 0.05 (*), p -value ≤ 0.01 (**), and p -value ≤ 0.001 (***).

Element	n			Shapiro-Wilk test				Levene's test		Statistical test			
	Control	Ash-exposed	Total	Control		Ash-exposed		F	p-value	Type	p-value	Level	
				W	p-value	W	p-value						
Coral skeleton	V	360	390	750	0.95	1.75E-08	0.97	2.88E-06	16.27	6.12E-05	WMW	5.33E-13	***
	Mn	360	390	750	0.94	3.20E-04	0.93	4.85E-11	37.33	2.32E-09	WMW	2.20E-16	***
	Fe	227	217	444	0.82	1.96E-15	0.78	2.20E-16	62.58	2.03E-14	Welch	2.20E-16	***
	Co	360	390	750	0.91	5.22E-10	0.92	1.06E-09	3.30	0.07	WMW	0.12	
	Ni	360	390	750	0.98	1.17E-04	0.97	1.79E-07	21.57	4.08E-06	WMW	2.20E-16	***
	Cu	360	390	750	0.96	1.58E-08	0.90	7.39E-15	1.26	0.26	WMW	0.02	*
	Zn	360	390	750	0.91	2.60E-13	0.87	2.20E-16	22.44	2.64E-06	WMW	1.00E-03	**
	Cd	360	390	750	0.96	0.65	0.93	0.53	1.55	0.23	WMW	0.08	
	Pb	360	390	750	0.93	1.90E-11	0.88	7.72E-16	8.64	0.003	WMW	2.20E-16	***
Coral tissue	V	6	6	12	0.78	0.04	0.88	0.25	0.02	0.89	ANOVA	1.00	
	Mn	6	6	12	0.96	0.85	0.94	0.64	14.81	3.22E-03	Welch	0.01	**
	Fe	6	6	12	0.80	0.05	0.96	0.79	4.22	0.07	ANOVA	0.02	*
	Co	6	6	12	0.96	0.81	0.95	0.73	3.90	0.08	ANOVA	0.19	
	Ni	6	6	12	0.88	0.27	0.95	0.75	3.36	0.10	ANOVA	0.93	
	Cu	6	6	12	0.80	0.05	0.85	0.16	5.52	0.04	Welch	0.40	
	Zn	6	6	12	0.94	0.62	0.88	0.25	4.52	0.06	ANOVA	0.41	
	Cd	6	6	12	0.92	0.52	1.00	0.92	0.83	0.39	ANOVA	0.32	
	Pb	6	6	12	0.92	0.52	0.85	0.15	4.78	0.05	ANOVA	0.20	
Symbionts	V	6	6	12	0.88	0.32	0.74	0.03	0.87	0.38	WMW	1.00	
	Mn	6	6	12	0.88	0.31	0.92	0.52	0.02	0.88	ANOVA	0.99	
	Fe	6	6	12	0.76	0.03	0.84	0.15	0.10	0.76	WMW	0.55	
	Co	6	6	12	0.76	0.04	0.83	0.15	0.38	0.55	WMW	0.42	
	Ni	6	6	12	0.86	0.22	0.90	0.43	0.58	0.47	ANOVA	0.31	
	Cu	6	6	12	0.79	0.07	0.96	0.78	0.43	0.53	ANOVA	0.25	
	Zn	6	6	12	0.69	0.01	0.93	0.58	0.62	0.45	WMW	0.31	
	Cd	6	6	12	0.90	0.39	-	-	0.50	0.55	WMW	0.50	
	Pb	6	6	12	-	-	-	-	-	-	Welch	-	

Table S9: Statistical results (nested ANOVA and Tukey post-hoc) of the effect of volcanic ash on the metal concentrations in *Stylophora pistillata* coral skeletons, accounting for tank effects. Condition refers to the experimental treatments control and ash-exposed.

Element	Statistical test				Differences between tanks*					
	Type	tested variable	F-value	p-value	A-B	A-C	A-D	B-C	B-D	C-D
V	nested	condition	56.68	2E-13	0.66	< 1E-5	< 1E-5	< 1E-5	< 1E-5	0.98
	ANOVA	tank	0.73	0.48						
Mn	nested	condition	165.60	<2e-16	0.99	< 1E-5	< 1E-5	< 1E-5	< 1E-5	< 1E-5
	ANOVA	tank	30.05	7E-13						
Fe	nested	condition	83.62	<2e-16	0.76	< 1E-5	1.44E-03	< 1E-5	0.01	< 1E-5
	ANOVA	tank	15.04	5E-07						
Co	nested	condition	4.26	0.04	0.11	0.12	0.01	1.00	0.81	0.81
	ANOVA	tank	2.91	0.06						
Ni	nested	condition	145.58	<2e-16	1.00	< 1E-5	0.04	< 1E-5	0.04	< 1E-5
	ANOVA	tank	94.26	<2e-16						
Cu	nested	condition	1.47	0.23	0.12	0.27	0.91	0.99	0.01	0.03
	ANOVA	tank	6.12	2E-03						
Zn	nested	condition	20.81	6E-06	0.51	< 1E-5	0.98	< 1E-5	0.18	< 1E-5
	ANOVA	tank	11.05	2E-05						
Cd	nested	condition	3.05	0.10	0.79	0.28	0.54	0.60	0.88	0.99
	ANOVA	tank	0.49	0.62						
Pb	nested	condition	233.97	<2e-16	0.02	< 1E-5	< 1E-5	< 1E-5	< 1E-5	0.28
	ANOVA	tank	5.93	3E-03						

*control tanks (A and B); ash-exposed tanks (C and D)

Table S10: Correlation analysis of several EI/Ca ratios in the skeletons of *S. pistillata* reared in control condition and after 6 weeks of exposure to 250 mg volcanic ash L⁻¹ per week. Correlation strength is presented as a) Pearson correlation coefficient (r), and b) statistically significant correlations exists when $p < 0.05$.

a)		Control												
Pearson	r	Li	B	Na	Mg	V	Mn	Co	Ni	Cu	Zn	Pb	Sr	U
		Li	B	Na	Mg	V	Mn	Co	Ni	Cu	Zn	Pb	Sr	U
Ash-exposed	Li	1	-0.48	0.77	0.83	0.03	0.10	-0.23	0.48	0.26	0.23	-0.12	0.20	-0.47
	B	-0.33	1	-0.38	-0.48	0.10	-0.01	0.02	-0.52	-0.20	-0.26	0.27	0.01	0.33
	Na	0.76	-0.25	1	0.72	0.03	0.13	-0.18	0.38	0.34	0.26	-0.12	0.16	-0.43
	Mg	0.77	-0.35	0.59	1	0.11	0.04	-0.36	0.33	0.25	0.27	-0.25	0.14	-0.56
	V	0.03	-0.17	0.08	-0.07	1	0.29	0.36	0.17	0.18	0.16	0.31	0.14	0.12
	Mn	-0.03	-0.07	-0.01	0.10	0.22	1	0.43	0.35	0.22	0.26	0.41	-0.04	-0.07
	Co	-0.13	-0.17	-0.04	-0.09	0.21	0.03	1	0.14	0.06	0.07	0.41	-0.06	0.23
	Ni	0.02	-0.36	-0.01	0.18	0.18	0.58	0.13	1	0.39	0.43	0.09	0.21	-0.06
	Cu	-0.13	-0.06	-0.10	-0.24	0.34	0.36	0.09	0.30	1	0.48	0.30	0.19	-0.01
	Zn	-0.12	-0.27	-0.07	-0.08	0.45	0.40	0.34	0.37	0.44	1	0.17	0.10	-0.09
	Pb	-0.32	0.12	-0.23	-0.49	0.37	0.13	0.12	0.09	0.61	0.30	1	0.23	0.31
	Sr	0.04	0.10	0.21	-0.08	0.08	0.02	-0.07	-0.01	0.06	-0.12	0.16	1	0.41
	U	-0.34	0.04	-0.19	-0.57	0.22	0.15	0.09	0.10	0.42	0.17	0.37	0.64	1
b) p-values		Li	B	Na	Mg	V	Mn	Co	Ni	Cu	Zn	Pb	Sr	U
Ash-exposed	Li	1	1.30E-04	2.71E-08	2.04E-09	0.21	0.82	0.02	0.01	0.13	0.11	0.00	0.78	4.41E-05
	B	0.06	1	3.58E-04	3.67E-04	0.43	0.72	0.27	2.56E-05	0.03	0.01	0.04	0.85	0.01
	Na	2.60E-07	0.09	1	6.91E-08	0.20	0.85	0.02	0.02	0.10	0.10	4.07E-03	0.90	3.25E-05
	Mg	7.30E-07	0.04	9.75E-05	1	0.13	0.72	0.01	0.02	0.13	0.09	1.93E-03	0.81	1.98E-05
	V	0.32	0.33	0.35	0.26	1	0.23	0.04	0.74	0.80	0.82	0.14	0.64	0.37
	Mn	0.41	0.37	0.30	0.80	0.35	1	0.04	0.33	0.60	0.41	0.21	0.10	0.65
	Co	0.26	0.40	0.29	0.37	0.22	0.90	1	0.58	0.52	0.59	0.01	0.26	0.09
	Ni	0.82	0.03	0.62	0.74	0.37	7.35E-04	0.54	1	0.03	0.01	0.21	0.84	0.05
	Cu	0.02	0.96	0.02	0.02	0.05	0.10	0.51	0.20	1	0.01	0.81	0.90	0.20
	Zn	0.16	0.19	0.12	0.28	0.01	0.04	0.06	0.04	0.01	1	0.49	0.76	0.10
	Pb	6.96E-04	0.33	2.25E-03	4.16E-05	0.08	0.59	0.48	0.89	0.04	0.11	1	0.96	0.43
	Sr	0.71	0.40	0.91	0.40	0.67	0.34	0.30	0.29	0.80	0.15	0.60	1	0.01
	U	1.18E-03	0.35	0.01	3.40E-05	0.21	0.65	0.59	0.92	0.01	0.29	0.17	2.41E-05	1

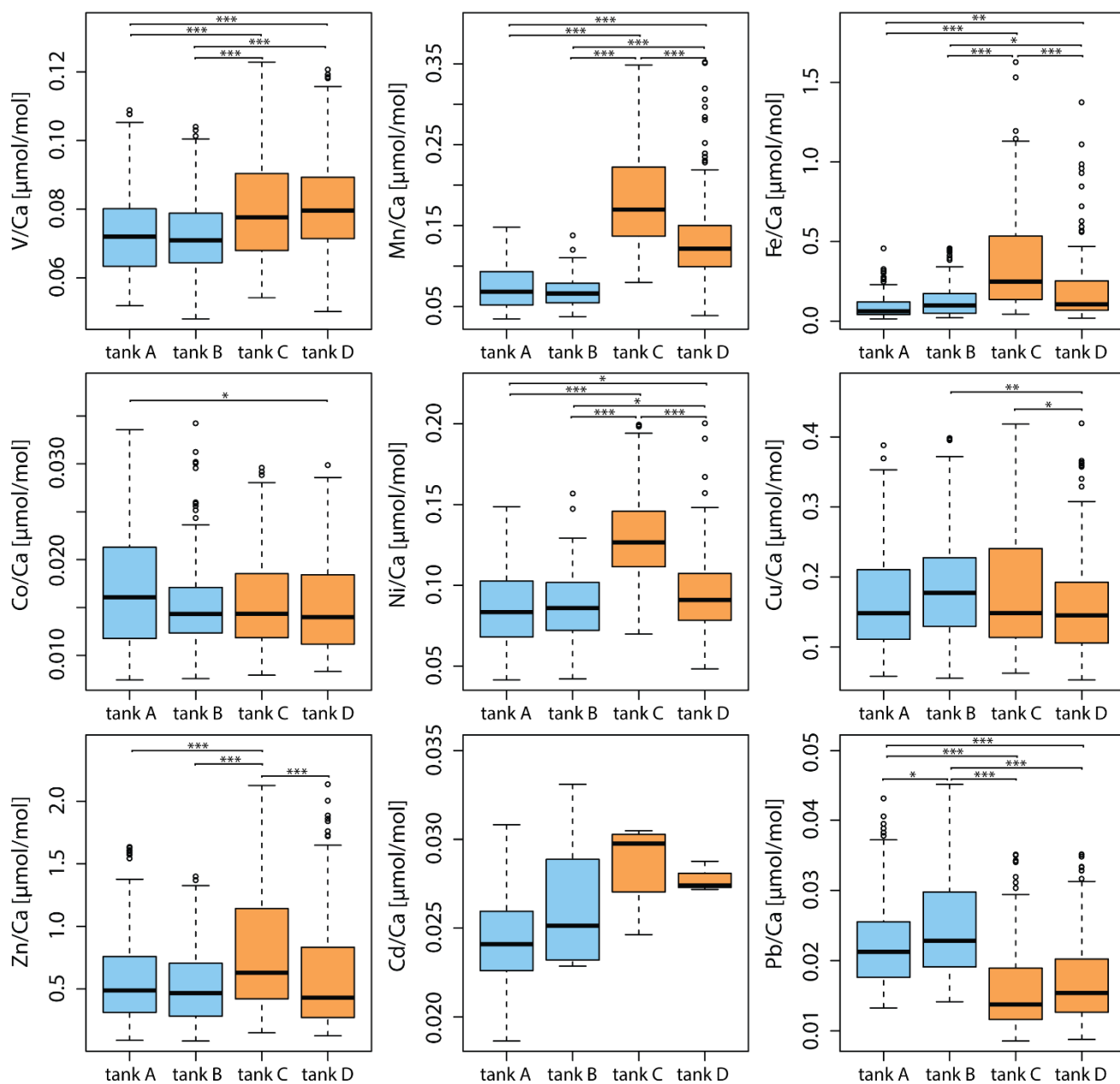


Figure S1: Trace metal content of *S. pistillata* coral skeletons in control tanks (blue; A & B) and in ash-exposed tanks (orange; C & D). Data are presented as El/Ca [$\mu\text{mol/mol}$] to account for ablated carbonate mass. The black line represents the median value, the black box delimits the 1st and 3rd quartile, and the whiskers give the range within 1.5-times the Inter-Quartile Range (IQR, defined as Q3-Q1) from the quartiles. Statistically significant differences between treatments are represented by asterisks (*), with an indication of the level of significance in the number of asterisks.