

Supporting Information:

Physico-Chemical Characterization of an Urban Rainwater (Zagreb, Croatia)

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Table S1. Performance of HR ICP-MS analyses: quality control (QC) as represented by analyzing certified standard reference materials "River Water Reference Material for Trace Metals" (SLRS-4, National Research Council Canada) (n = 11), the common level of procedural blanks and method Level of Quantification (LOQ). All values are provided in µg/L.

Element	Certified value (STD)	Measured value AVG (STD)	Blank	LOQ
Al	54 (4)	53 (10)	<0.05	0.150
As	0.68 (0.06)	0.74 (0.02)	<0.005	0.010
Ba	12.2 (0.6)	13.1 (1.1)	<0.100	0.015
Cd	0.012 (0.002)	0.013 (0.001)	<0.001	0.003
Co	0.033 (0.006)	0.030 (0.005)	<0.001	0.006
Cr	0.33 (0.02)	0.33 (0.03)	<0.005	0.010
Cu	1.81 (0.08)	1.73 (0.12)	<0.005	0.010
Fe	103 (5)	106 (10)	<0.030	0.100
Mn	3.37 (0.18)	3.45 (0.34)	<0.005	0.010
Mo	0.21 (0.02)	0.21 (0.02)	<0.005	0.010
Ni	0.67 (0.08)	0.66 (0.06)	<0.005	0.010
Pb	0.086 (0.007)	0.079 (0.008)	<0.005	0.010
Rb*	1.53 (0.05)	1.65 (0.16)	<0.010	0.030
Sb	0.23 (0.04)	0.25 (0.01)	<0.001	0.005
Sr	26.3 (3.2)	28.7 (2.7)	<0.020	0.050
Ti*	1.46 (0.008)	1.41 (0.15)	<0.010	0.030
V5	0.32 (0.03)	0.33 (0.03)	<0.002	0.010
Zn	0.93 (0.1)	0.97 (0.16)	<0.010	0.050

Table S2. Concentration of DOC and pH values in rainwater (Zagreb).

Sampling data	DOC mgC L ⁻¹	pH
21 Jan. 2009	1.441	5.28
27 Jan. 2009	1.184	5.28
2 Feb. 2009	2.712	5.28
10 Feb. 2009	1.077	6.21
3 Mar. 2009	3.638	4.38
5 Mar. 2009	1.262	6.3
20 Apr. 2009	2.171	5.91
21 Apr. 2009	1.716	5.4
23 Apr. 2009	4.864	6.76
28 Apr. 2009	3.219	6.73
27 May 2009	3.92	6.74

22 Jun. 2009	2.66	4.88
7 Jul. 2009	1.64	4.79
12 Oct. 2009	0.81	5.4
22 Oct. 2009	1.067	6
2 Nov. 2009	0.755	5.06
3 Nov. 2009	1.185	4.63
4 Nov. 2009	0.848	4.8
8 Dec. 2009	0.69	4.61
14. Dec.2009	1.11	6.79
10 Feb. 2010	1.66	3.8
2 Mar. 2010	1.29	4.99
4 Mar. 2010	1.75	4.14
9 Mar. 2010	0.86	5.3
14 Apr. 2010	2.26	5.4
5 May 2010	2.2	7.25
12 May 2010	1.33	4.15

Table S3. Correlation between DOC and metal concentrations in rainwater (Zagreb).

Metal	DOC	
	r	p
Al	0.76	0.001
Fe	0.70	0.004
Zn	0.59	0.022
Cr	0.45	0.089
Ba	0.45	0.089
Mn	0.70	0.004
Cu	0.56	0.031
Sr	0.71	0.003
Ti	0.65	0.009
Pb	0.56	0.031
V	0.24	0.390
Ni	0.61	0.015
Rb	0.74	0.002
Sb	0.70	0.004
As	0.62	0.014
Sn	0.26	0.354
Se	0.78	0.001
Co	0.68	0.005
Cd	0.37	0.179
Mo	0.78	0.001

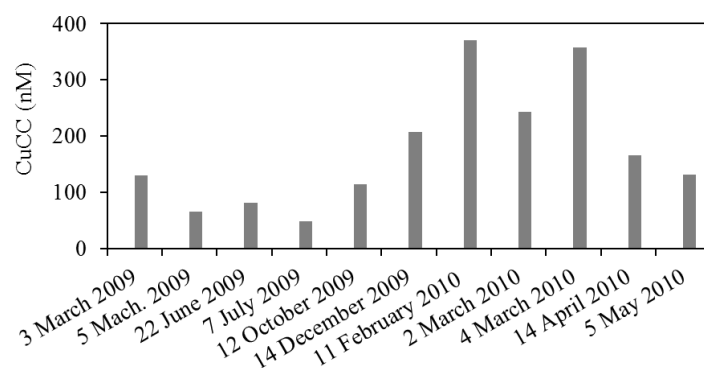


Figure S1. Copper complexing capacity (CuCC) in precipitation.

Table 4. RSS concentration and type of interaction with Hg in rainwater samples.

Rainwater sampling date	RSS _{total} / nM	Type of interaction with Hg
12.02.2009.	8	RS-Hg and HgS
23.04.2009.	4	HgS
21/22.04.2010.	5	HgS
28/29.03.2011.	6	RS-Hg and HgS
15.05.2011.	2	HgS
02.06.2011.	2	HgS

Table S5. Arithmetic means ($\mu\text{g/L}$), standard deviations (SD), median, minimum, maximum of trace elements in bulk samples (N = 19) of rainwater.

	Average	SD	Median	Min.	Max.
Al	92.46	175.99	43.87	2.07	776.53
Fe	81.82	95.16	43.34	4.94	360.37
As	0.16	0.22	0.07	0.02	0.94
Co	0.062	0.074	0.025	0.004	0.288
Cr	6.52	6.25	5.20	0.59	23.28
Se	0.07	0.05	0.05	0.02	0.21
Cu	3.73	3.29	2.55	0.48	11.72
Mn	4.21	4.74	2.13	0.22	16.43
Mo	0.06	0.04	0.04	0.01	0.187
V	0.75	0.54	0.58	0.16	1.91
Zn	7.56	8.27	4.85	1.05	32.47
Pb	1.17	1.34	0.74	0.16	5.78
Cd	0.06	0.08	0.03	0.01	0.34
Ni	0.64	0.51	0.51	0.15	2.38
Sb	0.17	0.12	0.13	0.04	0.47
Sn	0.11	0.09	0.09	0.04	0.44
Ti	2.28	2.93	0.97	0.06	9.81
Ba	4.60	4.83	2.16	0.30	15.57
Sr	2.81	3.54	1.43	0.23	11.79
Rb	0.20	0.22	0.13	0.03	0.95

Table S6. The relationship between metal concentrations and rainfall amounts. (Spearman correlation coefficients, r and p values).

	Rainfall amounts	
	r	p
Al	-0.79	0.00007
Fe	-0.80	0.00003
Zn	-0.82	0.00002
Cr	-0.50	0.03060
Ba	-0.74	0.00032
Mn	-0.71	0.00074
Cu	-0.83	0.00001
Sr	-0.78	0.00010
Ti	-0.80	0.00003
Pb	-0.68	0.00123
V	-0.28	0.25372
Ni	-0.60	0.00661
Rb	-0.71	0.00067
Sb	-0.78	0.00009
As	-0.71	0.00062
Sn	-0.51	0.02718
Se	-0.55	0.01489
Co	-0.72	0.00047
Cd	-0.54	0.01812
Mo	-0.77	0.00011

Table S7. Spearman correlation matrix for the metals in rainwater samples. .

	Al	Fe	Zn	Ba	Mn	Cu	Sr	Ti	Pb	Ni	Rb	Sb	As	Sn	Se	Co	Cd	Mo
Al	1.00																	
Fe	0.98	1.00																
Zn	0.93	0.93	1.00															
Ba	0.95	0.94	0.95	1.00														
Mn	0.89	0.91	0.88	0.91	1.00													
Cu	0.88	0.92	0.94	0.89	0.88	1.00												
Sr	0.91	0.92	0.90	0.91	0.94	0.88	1.00											
Ti	0.97	0.98	0.91	0.93	0.90	0.89	0.91	1.00										
Pb	0.80	0.82	0.91	0.89	0.84	0.85	0.84	0.83	1.00									
Ni	0.73	0.80	0.73	0.80	0.83	0.78	0.75	0.79	0.76	1.00								
Rb	0.81	0.81	0.83	0.82	0.91	0.80	0.89	0.85	0.78	0.75	1.00							
Sb	0.88	0.88	0.91	0.90	0.94	0.80	0.93	0.92	0.86	0.81	0.88	1.00						
As	0.83	0.83	0.91	0.87	0.74	0.95	0.79	0.82	0.91	0.66	0.76	0.76	1.00					
Sn	0.59	0.59	0.53	0.60	0.50	0.79	0.45	0.68	0.61	0.67	0.33	0.60	0.50	1.00				
Se	0.64	0.64	0.65	0.67	0.82	0.63	0.75	0.68	0.60	0.68	0.84	0.72	0.60	0.24	1.00			
Co	0.94	0.94	0.92	0.93	0.95	0.61	0.93	0.92	0.84	0.77	0.88	0.94	0.79	0.50	0.72	1.00		
Cd	0.56	0.56	0.62	0.60	0.47	0.71	0.56	0.56	0.54	0.54	0.47	0.90	0.59	0.40	0.30	0.48	1.00	
Mo	0.88	0.88	0.91	0.90	0.91	0.95	0.92	0.88	0.88	0.84	0.86	0.95	0.78	0.59	0.76	0.87	0.64	1.00