Electronic Supplementary Material (ESI) for Analytical Methods.

Substituting HF by HBF_4 - An optimized digestion method for multi elemental sediment analysis via ICP-MS/MS

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Electronic Supplemental

Table A1 Quantified elements, their analyzed *m*/*z*, as well as used detection modes.

Element	*m*/*z* (Q1)	*m*/*z* (Q2)	cell mode
Be		9	No Gas
Mg	24	24	H_2
Al	27	27	H_2
P	31	47	O_2
K	39	39	H_2
Ca		40	H_2
Sc	45	61	O_2
Ti	47	63	O_2
V	51	67	O_2
Cr		52	He
Mn	55	55	H_2
Fe	56	56	H_2
Co		59	He
Ni		60	He
Cu		63	He
Zn		66	He
Ga		71	He
As	75	91	O_2
Rb		85	No Gas
Sr		88	He
Zr	90	106	O_2
Mo	95	127	O_2
Ag		107	He
Cd	111	111	H_2
Sb		121	He
Te		125	No Gas
Cs		133	No Gas
Ba		137	He
La		139	No Gas
Ce		140	No Gas
Pr		141	No Gas
Nd		146	No Gas
Sm		147	No Gas
Eu		153	No Gas
Gd		157	No Gas
Tb		159	No Gas
Dy		163	No Gas
Ho		165	No Gas
Er		166	No Gas
Tm		169	No Gas
Yb		172	No Gas
Lu		175	No Gas

W	182	214	O_2
Tl		205	He
Pb		208	No Gas
Bi		209	He
Th		232	He
U		238	He

Table A2 Typical instrument settings and operating conditions for ICP-MS/MS measurements using the Agilent 8800.

Instrument configurations and settings	
Sample Introduction	Double-pass spray chamber
Nebulizer	Self aspirating PFA MicroFlow (ESI)
Interface cones	Nickel
RF power	1550 W
Carrier gas flow	1.12 L min^{-1}
Make-up gas flow	0.11 L min^{-1}
Used cell gases	He, O_2, H_2

Lens parameters	**No Gas**	**He**	**H_2**	**O_2**
Extract 1	0 V	0 V	0 V	0 V
Extract 2	-180 V	-180 V	-180 V	-180 V
Omega Bias	-95 V	-95 V	-95 V	-95 V
Omega Lens	8 V	8 V	8 V	8 V
Q1 Entrance	0 V	-4 V	0 V	2 V
Q1 Exit	-3 V	-13 V	-6 V	-2 V
Cell Focus	0 V	5 V	4 V	5 V
Cell Entrance	-40 V	-50 V	-50 V	-50 V
Cell Exit	-50 V	-60 V	-60 V	-60 V
Deflect	13 V	-3 V	-5 V	3 V
Plate Bias	-50 V	-60 V	-60 V	-60 V

Cell parameters				
Cell gas flow	none	4.5 mL min^{-1}	6.0 mL min^{-1}	30%
OctP Bias	-8 V	-18 V	-18 V	-5 V
OctP RF	130 V	190 V	200 V	190 V
Energy Discrimination	5 V	5 V	0 V	-7 V