Table S1: comparison of the different setups discussed in the study

	This study	Chen et al. [13]	Moynier et al. [14]	Li et al. [8]	Hobin et al. [18]	Gu et al. [4]
Instrument	Neoma	Sapphire	Sapphire	Nu Plasma 3 (Dummy bucket)	Neptune +	Neptune +
Mass resolution	>15,000 (XHR)	~400 (LR)	LR	>10,000 (pseudo HR)	~15,000 (XHR)	~1000 (LR)
RF power (W)	1200	1300	1300	700	800	600
Introduction system	Dry plasma (Aridus II)	Dry plasma (Apex Omega)	Dry plasma (Apex Omega)	Dry plasma (Aridus III)	Dry plasma (Aridus II)	Wet plasma
Sensitivity (V/ppm)	~40	~1200	~2000	~5	~6	#
Short-term repeatability (‰) *	0.06 (2SD)	0.01-0.04 (2SE)	#	#	0.03 (2SD)	#
Intermediate precision (‰) **	0.07 (2SD)	0.07 (2SD)	0.04 (2SD)	0.06 (2SD)	0.06 (2SD)	0.08 (2SD)

* aka "short-term external precision"
** aka “long-term external reproducibility”
# not reported

Table S2: K isotope compositions discussed in the text

Type of sample	Reference	δ^{41}K (‰)	± 2 SD	n	Study
Seawater	IAPSO	0.03	0.02	2	This study
Tuna fish	ERM-CE 464	0.38	0.01	2	This study
Fish protein	DORM-4	-0.24	0.03	2	This study
Lobster hepatopancreas	TORT-3	-0.29	0.03	2	This study
Granite	GA	-0.50		1	This study
Basalt	BCR-1	-0.40		1	This study
Basalt	BHVO-2	-0.40		1	This study
Green Beans	BCR-383	-0.84	0.07	2	This study
Rye grass	ERM-CD 281	-0.23		1	This study
Bovine Liver	SRM-1577c	0.15	0.00	2	This study
Whole milk	BCR-380	0.07	0.02	2	This study
Fetal Bovine Serum	FBS	-2.11		1	This study
Human Plasma		-0.09		1	This study
Human serum control		0.08		1	This study
Human serum control		0.09		1	This study
Human serum control		-0.47		1	This study
Human serum control		-0.67		1	This study
Human serum control		-0.33		1	This study
Human serum control		0.08		1	This study
Human serum control		-0.09		1	This study
Human serum control		-0.13		1	This study
Human serum control		-0.18		1	This study
Human serum control		-0.39		1	This study
Human serum cancer		-0.59		1	This study
Human serum cancer		0.13		1	This study
Human serum cancer		-0.08		1	This study
Human serum cancer		-0.31		1	This study
Human serum cancer		0.09		1	This study
Human serum cancer		-0.13		1	This study
Human serum cancer		-0.59		1	This study
Human serum cancer		-0.84		1	This study
Human serum cancer		-0.39		1	This study
Seawater		0.11	0.02	4	Chen et al. [13]
Basalt	BHVO-2	-0.48	0.03	4	Chen et al. [13]
Basalt	BCR-1	-0.49	0.05	1	Chen et al. [3]
Basalt	BHVO-2	-0.46	0.04	1	Chen et al. [3]
Lobster hepatopancreas	TORT-3	-0.31	0.03	3	Hobin et al. [18]
Basalt	BHVO-2	-0.38	0.04	1	Hobin et al. [18]
Bovine muscle	BCR-184	-0.52	0.02	5	Hobin et al. [18]
Serum	SeronormTM Serum	-0.30	0.04	5	Hobin et al. [18]
Whole blood	SeronormTM Whole blood	0.89	0.02	5	Hobin et al. [18]
CSF	Randox Cerebrospinal fluid	-0.13	0.03	5	Hobin et al. [18]
Hawaiian seawater		0.14	0.05	2	Hu et al. [5]
Basalt	BCR-1	-0.42		1	Hu et al. [5]
bush leaves	(GSV-2)	0.04		1	Li et al. [8]
spinach leaves	(GSB-6)	-0.20		1	Li et al. [8]
laver	(GSB-14)	0.25		1	Li et al. [8]
Sea weed (Laminaria japonica)		0.57		1	Li [31]
Sea weed (Porphyra)		1.11		1	Li [31]
Fish		-0.56		1	Li [31]
Clam		0.97		1	Li [31]
Jelly fish		-0.24		1	Li [31]
Daisy flower		-1.30		1	Li [31]
Corn seeds		-0.34		1	Li [31]
Beef		-0.19		1	Li [31]
Seawater		0.08	0.14	3	Li et al. [11]
Basalt	BCR-1	-0.25		1	Li et al. [11]
Basalt	BHVO-2	-0.35		1	Li et al. [11]
Chili pepper		-0.90		1	Li et al. [11]
Rice grain		-0.98		1	Li et al. [11]
Wolfberry fruit		-1.12		1	Li et al. [11]
Tea leaf		-1.26		1	Li et al. [11]
Prawn		-0.36		1	Morgan et al. [6]
Haddock		-0.08		1	Morgan et al. [6]
Scallop muscle		0.36		1	Morgan et al. [6]
Basalt	BHVO-2	-0.52		1	Morgan et al. [6]
Banana		-0.38		1	Morgan et al. [6]
Potato		0.10		1	Morgan et al. [6]
Lamb		-0.88		1	Morgan et al. [6]
Beef		-0.47		1	Morgan et al. [6]
Granite	GA	-0.45		1	Moynier et al. [15]
Basalt	BHVO-2	-0.43	0.04	3	Moynier et al. [15]
Seawater		0.14		1	Moynier et al. [15]
Tuna fish	ERM-CE464	0.31	0.05	2	Moynier et al. [14]
Mussel tissue	BCR668	0.53	0.02	2	Moynier et al. [14]
Bovine muscle	ERM-BB184	0.99	0.06	2	Moynier et al. [14]
Bovine blood	ERM-CE196	0.07	0.04		Moynier et al. [14]
Bovine liver	ERM-BB185	0.22	0.06		Moynier et al. [14]
Pig kidney	ERM-BB186	0.34	0.09		Moynier et al. [14]
Pig muscle	ERM-BB124	0.33	0.05		Moynier et al. [14]
Seawater		0.12	0.07	46	Wang et al. [25]