

ELECTRONIC SUPPLEMENTARY INFORMATION

of

Lithium isotopic composition of reference materials of biological origin TORT-2, DORM-2, TORT-3, DORM-4, SRM- 1400 and ERM-CE278k

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Figure S1: A summarized sketch of the followed procedure on reference material SRM-1400, ERM-CE278k, DORM-2, TORT-2, and in-house material PLK-VLFR. Sample names reported in article figures and tables are reported in pink.

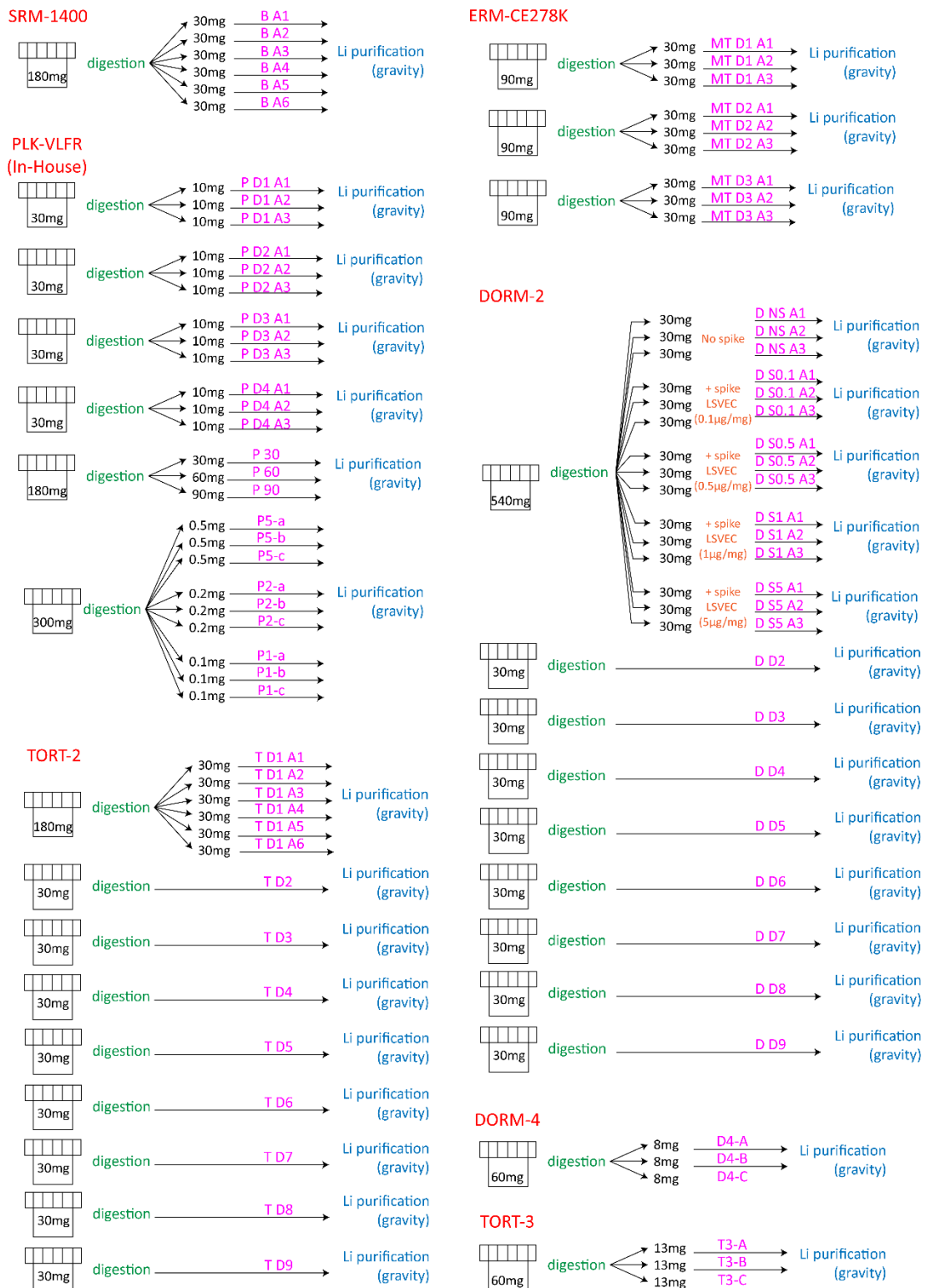


Figure S2: Screen shot of the Peak shape at collectors H4 (^7Li) and L4 (^6Li) for (a) LSVEC 4 ng/mL with blank HNO_3 0.5N (20 mV ^7Li) and (c) PLK-VLFR 4 ng/mL.

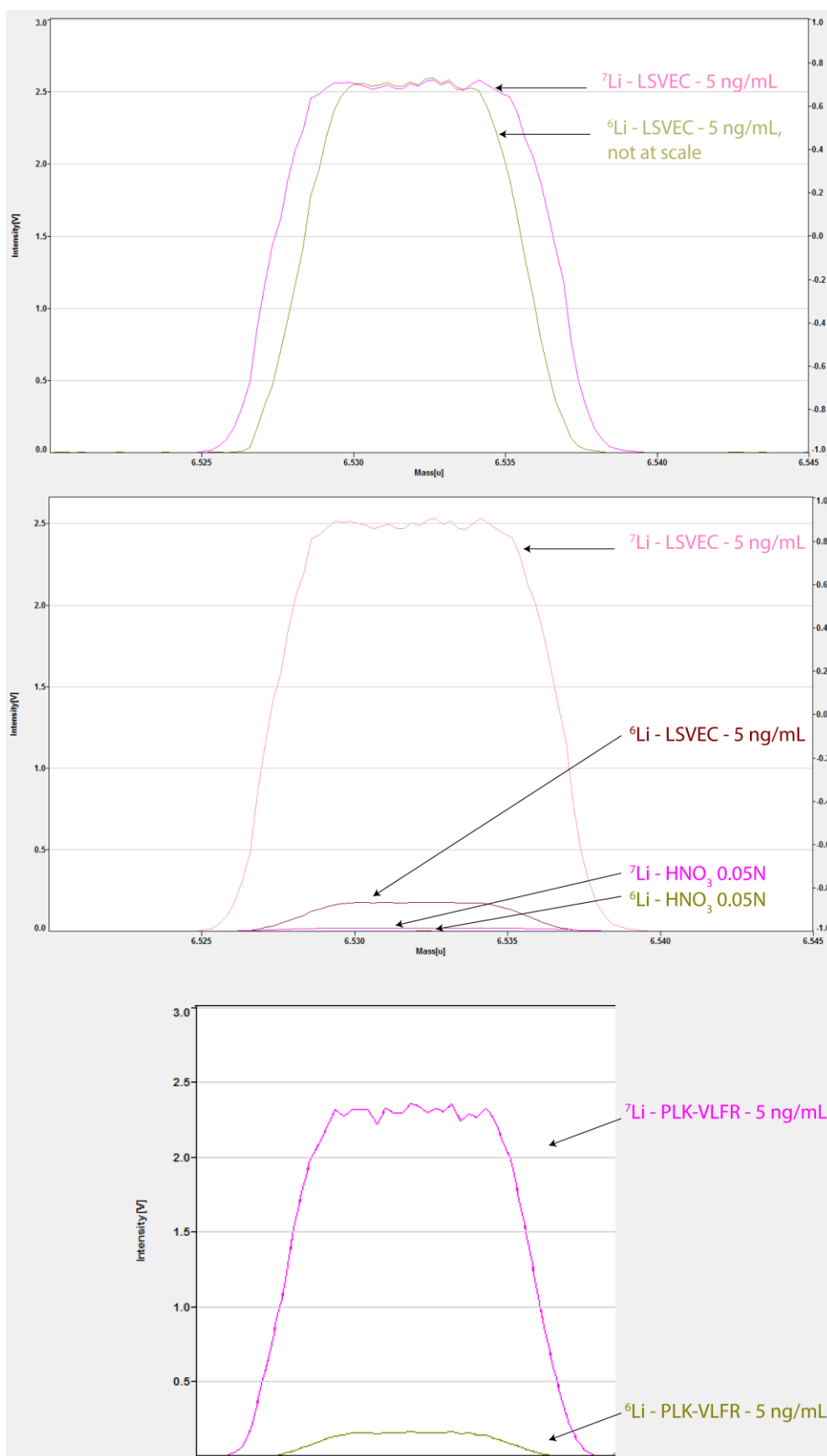


Table S1: $\delta^7\text{Li}$ of seven reference materials (ERM-CE278k, SRM-1400, TORT-2, TORT-3, Li7-N, DORM-2, and DORM-4) and one in-house standard (PLK-VLFR). "DW loaded" for the equivalent of dry weight loaded on a cationic resin column, "N" for digestion number (D#), "n" for Li-purification number (P#), "Li DW" for the material Li concentration, "bracket match" for the concentration matching with the standard bracketing during isotope ratio measurement, "se" for internal error. Sample name code: "P" for plankton, "MT" for mussel tissue, "B" for Bone Ash, "T" for TORT, "D" for DORM, "D#" for digestion number (correspond to "N"), "A#" for Li-purification aliquot number (correspond to "n").

Sple Type	Ref. Mat.	Sple Name	Li DW ($\mu\text{g/g}$)	N (D#)	DW loaded (mg)	Li loaded (μg)	n (P#)	Bracket mach (%)	Li (ng/mL) MC-ICP-MS	$\delta^7\text{Li}$ (‰)	se (‰)
PLANKTON	PLK-VLFR (in-house)	P-D1-A1	10.4	1	10	0.104	1	120	4.8	30.96	0.02
		P-D1-A2			10	0.104	2	120	4.8	31.15	0.02
		P-D1-A3			10	0.104	3	120	4.8	31.28	0.12
		P-D2-A1		2	10	0.104	1	120	4.8	30.65	0.02
		P-D2-A2			10	0.104	2	120	4.8	30.70	0.02
		P-D2-A3			10	0.104	3	120	4.8	31.05	0.04
		P-D3-A1		3	10	0.104	1	120	4.8	31.19	0.03
		P-D3-A2			10	0.104	2	120	4.8	31.29	0.03
		P-D3-A3			10	0.104	3	120	4.8	31.45	0.04
		P-D4-A1		4	10	0.104	1	120	4.8	30.72	0.03
		P-D4-A2			10	0.104	2	120	4.8	31.09	0.03
		P-D4-A3			10	0.104	3	120	4.8	30.92	0.03
		P-30		6	30	0.312	1	120	4.8	30.67	0.05
		P-60			60	0.624	2	120	4.8	30.74	0.03
		P-90			90	0.936	3	120	4.8	30.83	0.03
		P-D5-5-a		5	0.48	0.005	1	128	5.1	29.36	0.02
		P-D5-5-b			0.48	0.005	2	128	5.1	29.75	0.03
		P-D5-5-c			0.48	0.005	3	128	5.1	29.63	0.02
		P-D5-2-a		5	0.19	0.002	4	55	2.2	29.58	0.06
		P-D5-2-b			0.19	0.002	5	55	2.2	30.04	0.07
		P-D5-2-c			0.19	0.002	6	55	2.2	29.54	0.07
P-D5-1-a	5	0.1	0.001	7	28	1.1	29.38	0.10			
P-D5-1-b		0.1	0.001	8	28	1.1	27.85	0.10			
P-D5-1-c		0.1	0.001	9	28	1.1	30.24	0.26			
MUSSEL TISSUE	ERM-CE278k	MT-D1-A1	0.159	1	30	0.005	1	87	3.46	15.35	0.05
		MT-D1-A2			30	0.005	2	87	3.46	14.63	0.02
		MT-D1-A3			30	0.005	3	87	3.46	14.64	0.02
		MT-D2-A1		2	30	0.005	1	87	3.46	14.73	0.03
		MT-D2-A2			30	0.005	2	87	3.46	14.84	0.03
		MT-D2-A3			30	0.005	3	87	3.46	14.43	0.03
		MT-D3-A1		3	30	0.005	1	87	3.46	14.21	0.04
		MT-D3-A2			30	0.005	2	87	3.46	n.m.	n.m.
		MT-D3-A3			30	0.005	3	87	3.46	14.84	0.03
BONE ASH	BCR-543	B-A1	0.774	1	30	0.023	1	86	3.45	-1.91	0.02
		B-A2			30	0.023	2	86	3.45	-1.65	0.02
		B-A3			30	0.023	3	86	3.45	-1.30	0.02
		B-A4			30	0.023	4	86	3.45	-1.88	0.03
		B-A5			30	0.023	5	86	3.45	-1.93	0.02
		B-A6			30	0.023	6	86	3.45	-1.67	0.03
LOBSTER HEPATOPANCREAS	TORT-2	T-A1	0.24	1	30	0.007	1	108	4.33	24.46	0.04
		T-A2			30	0.007	2	108	4.33	23.77	0.04
		T-A3			30	0.007	3	108	4.33	23.57	0.04
		T-A4			30	0.007	4	108	4.33	24.58	0.03
		T-A5			30	0.007	5	108	4.33	24.31	0.03
		T-A6			30	0.007	1	108	4.33	22.84	0.05
		T-A7			30	0.007	1	108	4.33	24.49	0.06
		T-A8			30	0.007	1	108	4.33	24.07	0.04
		T-A9			30	0.007	1	108	4.33	21.00	0.03
		T-A10			30	0.007	1	108	4.33	22.00	0.02
		T-A11			30	0.007	1	108	4.33	20.57	0.02

		T-A12		8	30	0.007	1	108	4.33	22.90	0.03
		T-A13		9	30	0.007	1	108	4.33	21.78	0.03
FISH MUSSELE	DORM-2	D-NS-A1			30	0.001	1	25	1	21.99	0.06
		D-NS-A2	1		30	0.001	2	25	1	21.66	0.06
		D-NS-A3			30	0.001	3	25	1	22.68	0.05
		D-D2		2	30	0.001	1	25	1	20.25	0.08
		D-D3		3	30	0.001	1	25	1	22.17	0.10
		D-D4	0.05	4	30	0.001	1	25	1	22.01	0.11
		D-D5		5	30	0.001	1	25	1	17.05	0.19
		D-D6		6	30	0.001	1	25	1	18.06	0.07
		D-D7		7	30	0.001	1	25	1	16.21	0.08
		D-D8		8	30	0.001	1	25	1	16.57	0.08
		D-D9		9	30	0.001	1	25	1	19.06	0.05
FISH MUSSELE	DORM-4	D4-a			8	0.010	1	150	6	29.74	0.02
		D4-b			8	0.010	2	150	6	29.57	0.02
		D4-c	1.2	1	8	0.010	3	150	6	29.80	0.03
		D4-a			8	0.010	1	25	1	31.03	0.09
		D4-b			8	0.010	2	25	1	31.24	0.06
		D4-c			8	0.010	3	25	1	31.56	0.08
LOBSTER HEPATOPANCREAS	TORT-3	T3-a			13.3	0.004	1	90	3.6	24.34	0.05
		T3-b	0.33	1	13.3	0.004	2	90	3.6	24.16	0.03
		T3-c			13.3	0.004	3	90	3.6	24.02	0.04
SEAWATER	SW1G	SW-6				0.005	6	100	4	31.71	
		SW-7				0.005	7	100	4	31.22	
		SW-8	0.17			0.005	8	100	4	30.78	
		SW-9				0.005	9	100	4	31.57	
SOLUTION - with chemical purification	Li-7N	Li-7N-a				0.001	1	25	1	30.78	0.13
		Li-7N-b				0.001	2	25	1	29.95	0.09
SOLUTION - without chemical purification	Li-7N	Li-7N-1						125	5	30.15	0.03
		Li-7N-2						125	5	30.04	0.03
		Li-7N-3						125	5	30.04	0.03
		Li-7N-4						125	5	30.10	0.02
		Li-7N-5						125	5	29.96	0.03
		Li-7N-6						125	5	30.05	0.02
		Li-7N-7						100	4	30.24	0.03
		Li-7N-8						100	4	30.33	0.04
		Li-7N-9						100	4	30.18	0.03
		Li-7N-10						100	4	30.16	0.04
		Li-7N-11						100	4	30.11	0.03
		Li-7N-12						100	4	30.29	0.03
		Li-7N-13						100	4	30.21	0.03
		Li-7N-14						100	4	30.27	0.03
		Li-7N-15						100	4	30.10	0.02
		Li-7N-16						100	4	30.11	0.03
		Li-7N-17						63	2.5	30.15	0.04
		Li-7N-18						63	2.5	30.17	0.04
		Li-7N-19						63	2.5	30.10	0.04
		Li-7N-20						63	2.5	30.10	0.04
		Li-7N-21						31	1.25	30.20	0.10
		Li-7N-22						31	1.25	30.39	0.09
		Li-7N-23						31	1.25	30.23	0.05
		Li-7N-24						31	1.25	30.35	0.12
		Li-7N-25						16	0.625	29.83	0.19
		Li-7N-26						16	0.625	30.50	0.13
		Li-7N-27						16	0.625	30.37	0.16
		Li-7N-28						16	0.625	30.55	0.14
		Li-7N-29						3	0.125	28.35	0.59
		Li-7N-30						3	0.125	28.82	2.46
		Li-7N-31						3	0.125	30.20	0.70
		Li-7N-32						3	0.125	31.41	0.66
		Li-7N-33						2	0.0625	27.51	1.25
		Li-7N-34						2	0.0625	28.70	1.06
		Li-7N-35						2	0.0625	28.97	1.04
		Li-7N-36						2	0.0625	29.91	0.78

Table S2: Li isotope data for LSVEC-DORM-2 mixtures corresponding to the standard addition method described in the main text. "DW_{DORM}": DORM-2 equivalent of dry weight loaded on column, "Li_{LSVEC}": Li mass from LSVEC added to DORM-2 before Li separation through columns, "Li_{mix}": Li concentration of the mixture, "bracket match" for the concentration matching with the standard bracketing during isotope ratio measurement, "se" for internal error, "2SD" for the standard deviation of the "n" Li-purification replicates. Sample name code: "D" for DORM-2, "NS" for not "spiked", A# for Li-purification aliquot number (correspond to "n").

Sample Type	Sample Name	DW _{DORM} (mg)	Li _{LSVEC} (ng)	Li _{mix} (μg/g)	Bracket match (%)	δ ⁷ Li (‰)	se (‰)	δ ⁷ Li (‰)	2 SD (‰)	n
FISH MUSSLE	D-NS-A1	31.3	0	0.05	25	21.99	0.06			
FISH MUSSLE	D-NS-A2	31.3	0	0.05	25	21.66	0.06	22.11	1.05	3
FISH MUSSLE	D-NS-A3	31.3	0	0.05	25	22.68	0.05			
FISH MUSSLE	D-S0.1-A1	31.3	1.5	0.1	50	9.71	0.03			
FISH MUSSLE	D-S0.1-A2	31.3	1.5	0.1	50	9.11	0.04	9.53	0.72	3
FISH MUSSLE	D-S0.1-A3	31.3	1.5	0.1	50	9.76	0.04			
FISH MUSSLE	D-S0.5-A1	31.3	13.5	0.5	95	2.77	0.04			
FISH MUSSLE	D-S0.5-A2	31.3	13.5	0.5	95	2.23	0.06	2.38	0.69	6
FISH MUSSLE	D-S0.5-A3	31.3	13.5	0.5	95	2.13	0.06			
FISH MUSSLE	D-S1-A1	31.3	28.5	1	106	1.46	0.03			
FISH MUSSLE	D-S1-A2	31.3	28.5	1	106	1.26	0.06	1.32	0.26	3
FISH MUSSLE	D-S1-A3	31.3	28.5	1	106	1.22	0.03			
FISH MUSSLE	D-S5-A1	31.3	148.5	5	105	0.52	0.03			
FISH MUSSLE	D-S5-A2	31.3	148.5	5	105	0.77	0.02	0.61	0.29	3
FISH MUSSLE	D-S5-A3	31.3	148.5	5	105	0.53	0.02			