Supporting Information for

Separation of methylmercury from biological samples for stable isotopic analysis

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Table S1. Parameters of Nu-Plasma MC-ICP-MS and sample introduction systems

plasma parameters	
Nebulizer Ar flow rate	20 ~ 25 psi
mix gas	0.06 ~ 0.15 mL/min
RF power	1300 W
Aridus II desolvator	
T of the spray chamber	110 ℃
T of the desolator	160 ℃
Sensitivity for ^{205}Tl	0.2 ~ 0.4 V ppb^{-1}
Custom-made hydride generation system	
solution uptake rate	0.8~ 1.2 mL/min
Sensitivity for ^{202}Hg	2.2 ~ 3. 4 V ppb^{-1}

Table S2. MeHg isotopic composition for stock solution and mixed standard solution separated with our new method in this study. The 1:1, 3:7 and 1:9 represent the ratio of MeHg/IHg (NIST-3133) in the mixed standard solution.

Sample type	**description**	**n**	δ^{199}**MeHg (‰)**	2SD **(‰)**	δ^{200}**MeHg (‰)**	2SD **(‰)**	δ^{201}**MeHg (‰)**	2SD **(‰)**	δ^{202}**MeHg (‰)**	2SD **(‰)**	Δ^{199}**MeHg (‰)**	2SD **(‰)**	Δ^{200}**MeHg (‰)**	2SD **(‰)**	Δ^{201}MeHg **(‰)**	2SD **(‰)**	**MeHg Recovery %**
MeHg stock solution	MeHg	3	-0.17	0.06	-0.27	0.14	-0.50	0.10	-0.58	0.13	-0.03	0.03	0.02	0.08	-0.04	0.03	102±1
MeHg and IHg mixed solution	MeHg:IHg =1:1	3	-0.13	0.05	-0.28	0.07	-0.51	0.14	-0.56	0.11	0.01	0.06	0.00	0.02	-0.04	0.08	103±8
	MeHg:IHg =3:7	3	-0.08	0.03	-0.27	0.01	-0.53	0.12	-0.55	0.08	0.06	0.04	0.01	0.04	0.05	0.09	103±2
	MeHg:IHg =1:9	3	-0.20	0.04	-0.32	0.07	-0.50	0.03	-0.62	0.09	-0.05	0.04	-0.01	0.03	-0.07	0.04	107±3

Table S3. MeHg isotopic composition characteristics separated by toluene extraction method (TEM) according to *Masbou, et al (2013).*

	Samples	N	δ^{202}MeHg (‰)	2SD (‰)	Δ^{199} MeHg (‰)	2SD (‰)	Δ^{200}MeHg (‰)	2SD (‰)	Δ^{201} MeHg (‰)	2SD (‰)	MeHg Recovery %
CRMs	BCR-414	3	-0.05	0.09	1.16	0.01	0.19	0.53	0.84	0.05	87±7
	ERM-CE-464	4	0.65	0.07	2.24	0.16	0.07	0.04	1.85	0.13	110±6
	DORM-4	3	0.62	0.12	1.69	0.18	0.04	0.07	1.38	0.15	68±4
	DOLT-5	3	0.52	0.06	0.89	0.17	0.06	0.03	0.73	0.19	100±7
	SRM-1946	3	1.14	0.14	7.15	0.13	0.09	0.07	5.54	0.10	89±6
Natural biological samples	Bighead carp	2	-0.27	-0.14	1.04	-0.04	0.06	-0.04	0.86	-0.14	108±9
	Lobster	3	-0.80	-0.07	0.57	-0.02	-0.01	-0.04	0.38	-0.06	102±9
	Silver carp	2	-0.12	-0.20	1.34	-0.01	-0.01	-0.01	1.03	-0.09	111±6

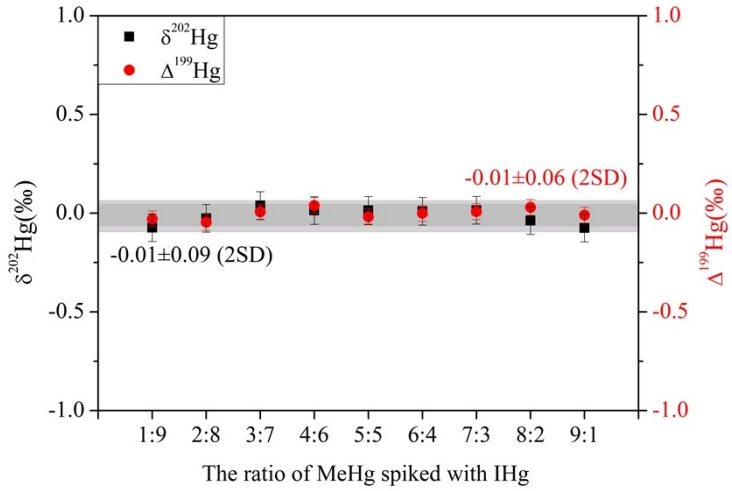

Figure S1. The isotopic composition of NIST-3133 directly analyzed using Nu-Plasma II MC-ICP-MS at different MeHg/IHg ratios. Error bars represent 2SD of the measurement of Hg isotope.

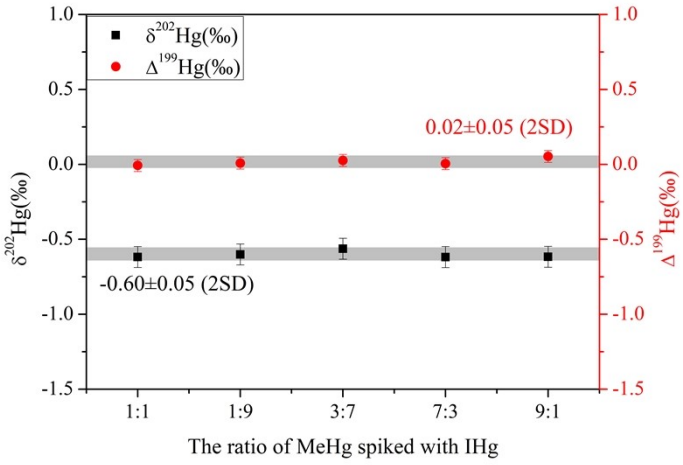

Figure S2. The isotopic composition of NIST-3177 directly analyzed using Nu-Plasma II MC-ICP-MS at different MeHg/IHg ratios. Error bars represent 2SD of the measurement of Hg isotope.