Supporting Information: STABLE MERCURY ISOTOPES IN POLISHED RICE (*Oryza sativa L.*) AND HUMAN HAIR FROM RICE CONSUMERS

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Table S1. Fish tissue total mercury (THg) concentrations.[1]

	Sample size	THg Average ± 1 SD (ng/g)
Freshwater fish	13	31 ± 31
Marine fish	1164	56 ± 30
Eel	21	50 ± 10
Shrimp	10	10
Crab	10	74
Snails	10	31
Other shellfish	735	68 ± 110

Table S2. Quality assurance/quality control for rice, hair, and fish mercury measurements.

	Daxin hair	Daxin rice[1]	Daxin fish[1]	Wanshan rice[1]	Arkansas rice[1]	Indonesian rice
THg **RPD (%) (n)**	7.1 (13)	0.59 (2)	4.2 (13)	6.2 (17)	9.3 (29)	12 (13)
THg **IAEA 086 Human Hair:** **% Recovery (n)**	95 (2)	NA	NA	NA	87 (2)	NA
THg **NRC-TORT2 Lobster** **% Recovery (n)**	NA	104 (2)	NA	110 (4)	102 (2)	NA
THg **NIST 1515 Apple Leaves** **% Recovery (n)**	NA	91 (2)	91 (4)	NA	89 (4)	100 (4)
THg **NIST 1568a** **% Recovery (n)**	NA	88 (4)	NA	74 (5)	NA	NA
MeHg **RPD (%)**	NA	7.7 (56)	NA	1.5 (3)	18 (6)	14 (9)
MeHg **Matrix spikes** **% Recovery (n)**	NA	96 (56)	NA	85 (3)	NA	NA
MeHg **NRC-TORT2 Lobster** **% Recovery (n)**	NA	95 (32)	NA	96 (2)	95 (2)	81 (4)
MeHg **ERM-580** **% Recovery (n)**	NA	NA	NA	NA	69 (2)	89 (2)

MeHg (methylmercury), n (sample size), NA (not applicable), RPD (relative percent difference), THg (total mercury)

[1]References: Daxin (rice MeHg and fish THg),[1] Wanshan (rice THg and MeHg),[2] and Arkansas, USA (rice THg and MeHg).[3]

Table S3. Stable mercury isotopes for rice (n=45) and hair (n=21), and fish/rice consumption (n=21). Hair and rice samples from Daxin, China are paired.

									n	δ^{199}Hg (‰)	2σ (‰)	δ^{200}Hg (‰)	2σ (‰)	δ^{201}Hg (‰)	2σ (‰)	δ^{202}Hg (‰)	2σ (‰)	Δ^{199}Hg (‰)	2σ (‰)	Δ^{200}Hg (‰)	2σ (‰)	Δ^{201}Hg (‰)	2σ (‰)
							UM-Almadén		18	-0.15	0.08	-0.25	0.08	-0.40	0.11	-0.51	0.07	-0.02	0.07	0.00	0.06	-0.02	0.09
							IAEA-086 (hair)		2	0.48	0.01	0.41	0.10	0.82	0.11	0.77	0.10	0.29	0.01	0.02	0.05	0.24	0.03
							TORT-2 (lobster)		3	0.80	0.05	0.13	0.07	0.74	0.13	0.18	0.11	0.75	0.02	0.04	0.04	0.60	0.06
id	Rice or Hair	Location[1]	% MeHg intake from rice	Fish (servings/weekly)	Rice THg (ng/g)	Rice MeHg (ng/g)	Rice % MeHg (of THg)	Hair THg (T2) (µg/g)	n	δ^{199}Hg (‰)	2σ (‰)	δ^{200}Hg (‰)	2σ (‰)	δ^{201}Hg (‰)	2σ (‰)	δ^{202}Hg (‰)	2σ (‰)	Δ^{199}Hg (‰)	2σ (‰)	Δ^{200}Hg (‰)	2σ (‰)	Δ^{201}Hg (‰)	2σ (‰)
1	Rice	Daxin	95.0	0.21	13.9	12.5	90.1		1	-0.30		-0.70		-1.00		-1.32		0.03		-0.04		-0.01	
1	Hair	Daxin						1.54	1	-0.04		-0.09		-0.13		-0.11		-0.01		-0.04		-0.05	
2	Rice	Daxin	87.0	0.49	14.2	6.55	46.3		1	-0.18		-0.62		-0.92		-1.33		0.15		0.04		0.07	
2	Hair	Daxin						1.19	1	0.05		0.26		0.36		0.58		-0.09		-0.03		-0.07	
3	Rice	Daxin	100	0	12.4	5.66	45.7		1	-0.65		-0.99		-1.52		-1.74		-0.21		-0.11		-0.21	
3	Hair	Daxin						1.25	1	0.55		0.42		0.78		0.71		0.37		0.07		0.25	
4	Rice	Daxin	74.0	0.49	18.7	5.26	28.1		1	-0.24		-0.71		-1.02		-1.49		0.13		0.03		0.10	
4	Hair	Daxin						1.03	1	0.46		0.61		0.94		1.07		0.19		0.07		0.133	
5	Rice	Daxin	79.0	1.12	12.0	5.79	48.3		1	-0.62		-0.87		-1.41		-1.67		-0.20		-0.03		-0.16	
5	Hair	Daxin						1.71	1	-0.01		-0.13		-0.05		-0.15		0.02		-0.05		0.07	
6	Rice	Daxin	91.0	0.56	14.0	12.1	86.7		1	-0.36		-0.67		-0.94		-1.17		-0.07		-0.08		-0.06	
6	Hair	Daxin						2.00	1	0.14		0.26		0.33		0.57		0.00		-0.03		-0.10	
7	Rice	Daxin	97.0	0.21	20.7	14.6	70.7		1	-0.50		-1.00		-1.60		-2.08		0.02		0.04		-0.04	
7	Hair	Daxin						1.76	1	0.07		-0.03		0.08		-0.04		0.08		0.00		0.11	
8	Rice	Daxin	57.0	5.60	14.1	11.1	78.6		1	-0.32		-0.75		-1.04		-1.40		0.03		-0.05		0.01	
8	Hair	Daxin						1.38	1	0.24		-0.14		-0.03		-0.25		0.30		-0.02		0.16	
9	Rice	Daxin	96.0	0.21	13.5	13.0	96.3		1	-0.31		-0.69		-0.98		-1.41		0.05		0.01		0.07	
9	Hair	Daxin						1.42	1	0.31		0.35		0.61		0.77		0.12		-0.04		0.03	
10	Rice	Daxin	61.0	1.54	10.4	9.26	88.9		1	-0.30		-0.66		-1.07		-1.37		0.05		0.02		-0.04	
10	Hair	Daxin						1.06	1	0.25		0.27		0.47		0.52		0.12		0.01		0.08	
11	Rice	Daxin	40.0	5.25	13.0	6.91	53.2		1	-0.45		-0.96		-1.49		-2.04		0.06		0.07		0.05	
11	Hair	Daxin						1.17	1	0.22		-0.05		0.10		-0.13		0.25		0.02		0.20	
12	Rice	Daxin	33.0	2.24	13.5	9.22	68.3		1	-0.38		-0.68		-1.06		-1.38		-0.03		0.01		-0.02	
12	Hair	Daxin						1.17	1	0.39		0.30		0.57		0.45		0.28		0.08		0.23	
13	Rice	Daxin	100	0	9.98	9.54	95.6		1	-0.33		-0.78		-1.07		-1.52		0.05		-0.02		0.07	
13	Hair	Daxin						2.71	1	-0.08		-0.22		-0.15		-0.17		-0.04		-0.13		-0.02	
14	Rice	Daxin	31.0	2.52	19.1	6.35	33.3		1	-0.23		-0.58		-0.88		-1.26		0.08		0.06		0.07	
14	Hair	Daxin						1.11	1	0.74		0.63		1.2		1.27		0.42		0.00		0.25	
15	Rice	Daxin	100	0	13.0	7.14	55.0		1	-0.62		-0.96		-1.58		-2.00		-0.12		0.05		-0.08	
15	Hair	Daxin						2.04	1	0.41		0.50		0.83		1.00		0.16		0.00		0.08	
16	Rice	Daxin	100	0	13.7	6.69	48.7		1	-0.56		-0.66		-1.19		-1.26		-0.24		-0.03		-0.24	

#	Type	Location							T2														
16	Hair	Daxin						3.05	1	0.09		0.31		0.37		0.58		-0.06		0.02		-0.06	
17	Rice	Daxin	79.0	0.21	13.5	6.44	47.6		1	-0.74		-1.11		-1.79		-2.26		-0.17		0.03		-0.09	
17	Hair	Daxin						1.36	2	0.16	0.01	0.14	0.03	0.25	0.00	0.21	0.13	0.10	0.04	0.03	0.03	0.09	0.09
18	Rice	Daxin	75.0	0.56	11.5	6.21	54.0		1	-0.66		-1.05		-1.49		-1.79		-0.21		-0.15		-0.14	
18	Hair	Daxin						1.05	2	0.61	0.06	0.55	0.06	1.01	0.07	0.89	0.11	0.38	0.03	0.10	0.11	0.35	0.00
19	Rice	Daxin	100	0	9.50	7.00	73.9		1	-0.47		-0.68		-1.11		-1.35		-0.13		0.00		-0.10	
19	Hair	Daxin						2.27	1	-0.06		-0.05		-0.07		-0.12		-0.03		0.02		0.03	
20	Rice	Daxin	100	0	11.4	8.84	77.6		1	-0.29		-0.64		-0.91		-1.31		0.04		0.12		0.07	
20	Hair	Daxin						1.19	1	-0.29		-0.42		-0.76		-0.86		-0.08		0.02		-0.11	
21	Rice	Daxin	85	0.21	13.2	7.14	54.0		1	-0.64		-0.90		-1.51		-1.96		-0.15		0.08		-0.04	
21	Hair	Daxin						1.10	1	-0.02		0.00		-0.11		-0.07		0.00		0.04		-0.06	
22	Rice	Wanshan			12.5	2.91	23.3		1	-0.41		-0.90		-1.42		-1.82		0.05		0.02		-0.05	
23	Rice	Wanshan			38.4	12.3	32.0		1	-0.47		-1.02		-1.46		-1.88		0.01		-0.07		-0.04	
24	Rice	Wanshan			10.6	4.99	47.0		1	-0.09		-0.22		-0.38		-0.46		0.03		0.01		-0.03	
25	Rice	Wanshan			20.8	7.74	37.2		1	-0.22		-0.72		-0.99		-1.53		0.16		0.05		0.16	
26	Rice	Wanshan			10.0	5.84	58.2		1	-0.07		-0.01		-0.13		-0.07		-0.05		0.02		-0.08	
27	Rice	Wanshan			23.6	6.90	29.2		1	-0.35		-0.46		-0.71		-0.86		-0.13		-0.03		-0.06	
28	Rice	Wanshan			26.2	12.8	48.8		1	-0.51		-0.94		-1.39		-1.78		-0.06		-0.05		-0.05	
29	Rice	Wanshan			17.8	10.6	59.7		1	-0.41		-0.74		-1.17		-1.45		-0.04		-0.01		-0.08	
30	Rice	Cisitu			8.91	2.83	31.8		1	-0.60		-1.05		-1.43		-1.91		-0.12		-0.09		0.01	
31	Rice	Cisitu			15.1	3.63	24.0		1	-0.61		-1.11		-1.63		-2.06		-0.10		-0.08		-0.09	
32	Rice	Cisitu			17.0	2.56	15.0		1	-0.60		-1.28		-2.06		-2.66		0.07		0.06		-0.06	
33	Rice	Cisitu			13.1	1.76	13.4		1	-0.58		-0.95		-1.52		-1.95		-0.09		0.02		-0.05	
34	Rice	Cisitu			25.9	11.9	46.0		1	0.00		-0.20		-0.28		-0.49		0.12		0.04		0.08	
35	Rice	Cisitu			10.4	2.02	19.3		1	-0.58		-0.94		-1.57		-1.98		-0.08		0.06		-0.08	
36	Rice	PJV			176	8.54	4.84		1	-0.78		-1.60		-2.50		-3.34		0.06		0.08		0.02	
37	Rice	PJV			169	11.1	6.59		1	-0.97		-1.64		-2.49		-3.13		-0.18		-0.07		-0.13	
38	Rice	PJV			106	5.74	5.40		1	-0.78		-1.54		-2.45		-3.25		0.04		0.09		0.00	
39	Rice	PJV			101	6.26	6.18		1	-0.79		-1.61		-2.47		-3.22		0.02		0.01		-0.05	
40	Rice	PJV			200	16.7	8.36		1	-0.91		-1.61		-2.52		-3.23		-0.09		0.01		-0.09	
41	Rice	PJV			103	17.8	17.3		1	-0.56		-1.03		-1.69		-2.20		0.00		0.07		-0.03	
42	Rice	Bombana			16.6	7.47	45.1		1	-0.40		-0.41		-0.76		-0.74		-0.21		-0.04		-0.20	
43	Rice	Arkansas			19.9	18.1	90.9		1	-0.40		-0.53		-0.90		-0.98		-0.15		-0.04		-0.17	
44	Rice	Arkansas			25.4	21.8	85.7		1	-0.36		-0.44		-0.81		-0.90		-0.13		0.01		-0.13	
45	Rice	Arkansas			8.15	7.84	96.2		1	-0.36		-0.45		-0.79		-0.89		-0.13		0.00		-0.12	

Hg (mercury), methylmercury (MeHg), PJV (Pangkal Jaya Village), T2 (trimester 2), THg (total mercury)

[1] Locations include Daxin, China; Wanshan, China; Cisitu, Indonesia; Pangkal Jaya Village, Indonesia; Bombana, Indonesia; Arkansas, USA
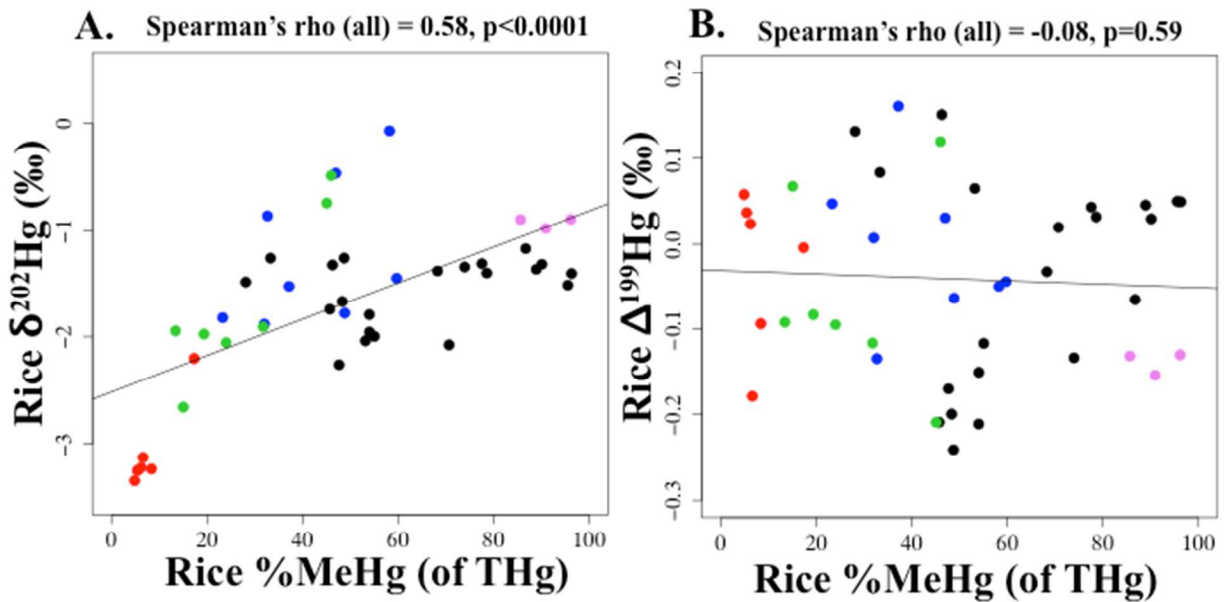
Figure S1. a) Rice δ^{202}Hg versus rice %methylmercury (MeHg) [of total mercury (THg)] (n=45). When artisanal and small-scale gold mining sites were excluded (red circles), the association was attenuated (Spearman's rho = 0.37, p=0.02, n=39). b) Rice Δ^{199}Hg versus rice %MeHg (of THg) (n=45). For rice: black (Daxin, China), blue (Wanshan, China), green (background sites in Indonesia), red (artisanal and small scale gold mining sites in Indonesia), and pink (Arkansas, USA).

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