

**On line pre-concentration – cold vapour – atomic absorption
spectrometry for the determination of trace of mercury in edible
seaweeds**

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Table S1. $2^8 \times 3/32$ folded Plackett–Burman design, resolution IV, 2 replicates and 24 runs (mercury aqueous standards – $2.5 \mu\text{g l}^{-1}$).

Run	[NaBH ₄] /%(m/v)	[HCl] /M	[NaCl] /M	S ₁ /rpm	S ₂ /rpm	t _L / s	t _E /s	A ^a	Hg absorbance
1	0.2	1	2	100	80	20	45	High	0.036
2	0.2	4	0.5	120	80	20	25	High	0.032
3	0.05	4	2	100	120	20	25	Low	0.059
4	0.2	1	2	120	80	45	25	Low	0.053
5	0.2	4	0.5	120	120	20	45	Low	0.063
6	0.2	4	2	100	120	45	25	High	0.034
7	0.05	4	2	120	80	45	45	Low	0.141
8	0.05	1	2	120	120	20	45	High	0.029
9	0.05	1	0.5	120	120	45	25	High	0.029
10	0.2	1	0.5	100	120	45	45	Low	0.035
11	0.05	4	0.5	100	80	45	45	High	0.031
12	0.05	1	0.5	100	80	20	25	Low	0.026
13	0.05	4	0.5	120	120	45	25	Low	0.100
14	0.05	1	2	100	120	45	45	Low	0.097
15	0.2	1	0.5	120	80	45	45	High	0.029
16	0.05	4	0.5	100	120	20	45	High	0.032
17	0.05	1	2	100	80	45	25	High	0.033
18	0.05	1	0.5	120	80	20	45	Low	0.025
19	0.2	1	0.5	100	120	20	25	High	0.036
20	0.2	4	0.5	100	80	45	25	Low	0.069
21	0.2	4	2	100	80	20	45	Low	0.039
22	0.05	4	2	120	80	20	25	High	0.035
23	0.2	1	2	120	120	20	25	Low	0.031
24	0.2	4	2	120	120	45	45	High	0.034
25	0.2	1	2	100	80	20	45	High	0.034
26	0.2	4	0.5	120	80	20	25	High	0.033
27	0.05	4	2	100	120	20	25	Low	0.057
28	0.2	1	2	120	80	45	25	Low	0.050
29	0.2	4	0.5	120	120	20	45	Low	0.065
30	0.2	4	2	100	120	45	25	High	0.033
31	0.05	4	2	120	80	45	45	Low	0.119
32	0.05	1	2	120	120	20	45	High	0.028
33	0.05	1	0.5	120	120	45	25	High	0.028
34	0.2	1	0.5	100	120	45	45	Low	0.025
35	0.05	4	0.5	100	80	45	45	High	0.034
36	0.05	1	0.5	100	80	20	25	Low	0.019
37	0.05	4	0.5	120	120	45	25	Low	0.102
38	0.05	1	2	100	120	45	45	Low	0.076
39	0.2	1	0.5	120	80	45	45	High	0.032
40	0.05	4	0.5	100	120	20	45	High	0.031
41	0.05	1	2	100	80	45	25	High	0.032

42	0.05	1	0.5	120	80	20	45	Low	0.025
43	0.2	1	0.5	100	120	20	25	High	0.035
44	0.2	4	0.5	100	80	45	25	Low	0.071
45	0.2	4	2	100	80	20	45	Low	0.037
46	0.05	4	2	120	80	20	25	High	0.032
47	0.2	1	2	120	120	20	25	Low	0.036
48	0.2	4	2	120	120	45	45	High	0.037

(a) High (hydrochloric acid at 2.0 M) and Low (hydrochloric acid at 0.05 M)

Table S2. $2^7 \times 3/32$ folded Plackett–Burman design, resolution IV, 1 center point, 2 replicates and 25 runs (acid digests from seaweed).

Run	[NaBH ₄] /(m/v)	[HCl] /M	[NaCl] /M	S ₁ /rpm	S ₂ /rpm	t _L / s	t _E /s	Hg absorbance
1	0.2	1	2	100	80	20	45	0.012
2	0.2	4	0.5	120	80	20	25	0.014
3	0.05	4	2	100	120	20	25	0.012
4	0.2	1	2	120	80	45	25	0.013
5	0.2	4	0.5	120	120	20	45	0.011
6	0.2	4	2	100	120	45	25	0.010
7	0.05	4	2	120	80	45	45	0.012
8	0.05	1	2	120	120	20	45	0.011
9	0.05	1	0.5	120	120	45	25	0.012
10	0.2	1	0.5	100	120	45	45	0.013
11	0.05	4	0.5	100	80	45	45	0.012
12	0.05	1	0.5	100	80	20	25	0.009
13	0.125	2.5	1.25	110	100	32.5	35	0.011
14	0.05	4	0.5	120	120	45	25	0.012
15	0.05	1	2	100	120	45	45	0.012
16	0.2	1	0.5	120	80	45	45	0.010
17	0.05	4	0.5	100	120	20	45	0.010
18	0.05	1	2	100	80	45	25	0.012
19	0.05	1	0.5	120	80	20	45	0.011
20	0.2	1	0.5	100	120	20	25	0.011
21	0.2	4	0.5	100	80	45	25	0.013
22	0.2	4	2	100	80	20	45	0.012
23	0.05	4	2	120	80	20	25	0.011
24	0.2	1	2	120	120	20	25	0.013
25	0.2	4	2	120	120	45	45	0.013
26	0.2	1	2	100	80	20	45	0.013
27	0.2	4	0.5	120	80	20	25	0.014
28	0.05	4	2	100	120	20	25	0.011
29	0.2	1	2	120	80	45	25	0.014
30	0.2	4	0.5	120	120	20	45	0.012
31	0.2	4	2	100	120	45	25	0.011
32	0.05	4	2	120	80	45	45	0.012
33	0.05	1	2	120	120	20	45	0.010
34	0.05	1	0.5	120	120	45	25	0.012
35	0.2	1	0.5	100	120	45	45	0.012
36	0.05	4	0.5	100	80	45	45	0.011
37	0.05	1	0.5	100	80	20	25	0.010
38	0.125	2.5	1.25	110	100	32.5	35	0.011
39	0.05	4	0.5	120	120	45	25	0.011
40	0.05	1	2	100	120	45	45	0.012
41	0.2	1	0.5	120	80	45	45	0.011

42	0.05	4	0.5	100	120	20	45	0.010
43	0.05	1	2	100	80	45	25	0.011
44	0.05	1	0.5	120	80	20	45	0.010
45	0.2	1	0.5	100	120	20	25	0.010
46	0.2	4	0.5	100	80	45	25	0.013
47	0.2	4	2	100	80	20	45	0.013
48	0.05	4	2	120	80	20	25	0.012
49	0.2	1	2	120	120	20	25	0.015
50	0.2	4	2	120	120	45	45	0.013
