Analytical Methods

Electronic Supplementary Material

Quick and robust method for trace determination of MeHg in rice and rice products without derivatisation

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A: Modifications at the gas-liquid-separator of the preconcentration HPLC-CV-AFS

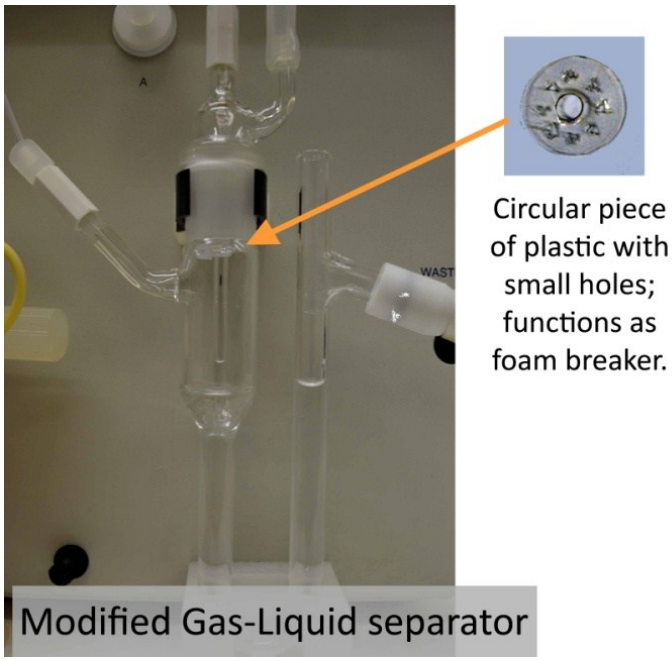

Figure S1: The gas-liquid-separator modified with a foam breaker (circular plastic piece held in place by a mini-cable tie attached to the glass tube of the argon carrier gas inlet).

B: Overlay of the different chromatograms from individual calibration standards

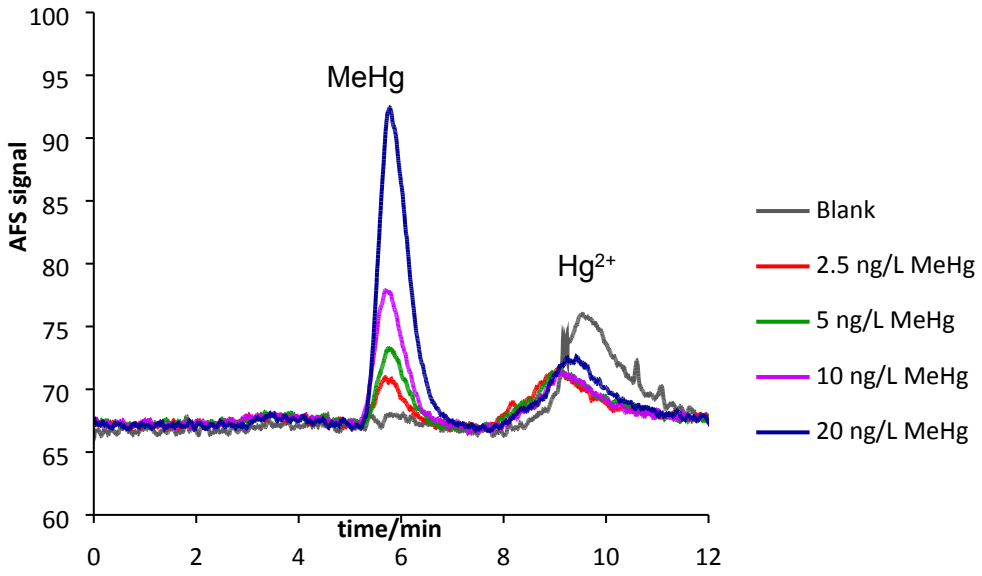

Figure S2: Chromatogram of Blank, 2.5, 5, 10 and 20 ng L^{-1} MeHg overlayed.

C: Calculation of the concentration for rice 2 via standard addition of MeHg

The concentration in the sample is given by extrapolating the linear regression of the data point to y=0.

$$y = m\,x + b \quad \text{with } y = 0, x \text{ becomes } -c(\text{MeHg})$$

$$\Rightarrow c(\text{MeHg}) = \frac{b}{m}$$

The standard deviation of c(MeHg) can be calculated from the standard deviation of the y-intercept and the slope from the linear regression:

$$s_c = c \times \sqrt{\left(\frac{s_m}{m}\right)^2 + \left(\frac{s_b}{b}\right)^2}$$

With the information of the standard deviation for the slope and y-intercept from Excel (LINEST function in Microsoft Excel) can the standard deviation of the concentration be calculated.

Table S1: Information about the linear regression from the standard addition experiment.

Parameter	Data from Excel
Slope	37460.2
SD for slope	821.2
y-intercept	62858
SD for y-intercept	2822
Correlation coefficient	0.9990

The concentration of MeHg calculates to 1.67 ± 0.08 µg kg^{-1}.

D: Example chromatogram of rice analyzed with SSID-GC-ICP-MS

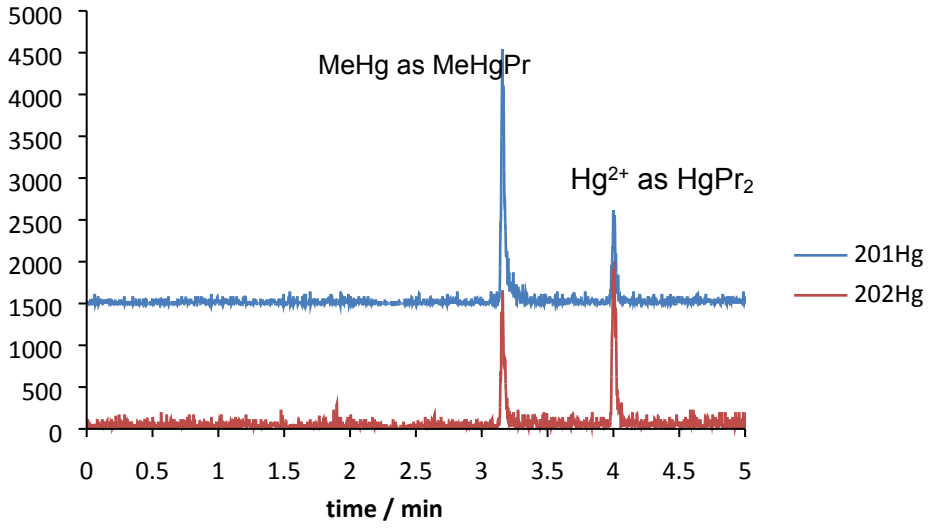

Figure S3: Chromatogram of rice sample 4 analyzed with SSID-GC-ICP-MS.