Electronic Supplement

Table S 1: ICP-MS acquisition parameters used in this work. ^{71}Ga was used as internal standard for the low (^{75}As, ^{77}Se, ^{73}Ge, ^{82}Se), ^{113}In for the middle (^{126}Te, ^{118}Sn, ^{121}Sb, ^{127}I) and ^{205}Tl for the high mass range (^{202}Hg, ^{209}Bi).

Sampling time		0.308 s
Analyte masses	(0.05 s)	^{75}As, ^{77}Se,
	(0.02 s)	^{73}Ge, ^{82}Se, ^{126}Te,
	(0.01 s)	^{118}Sn, ^{121}Sb, ^{127}I, ^{202}Hg, ^{209}Bi
Internal standards	(0.005 s)	^{71}Ga, ^{113}In, ^{205}Tl
Matrix components	(0.01 s)	^{129}Xe, ^{13}C, ^{30}Si, ^{34}S
	(0.002 s)	^{35}Cl, ^{44}CO$_2$

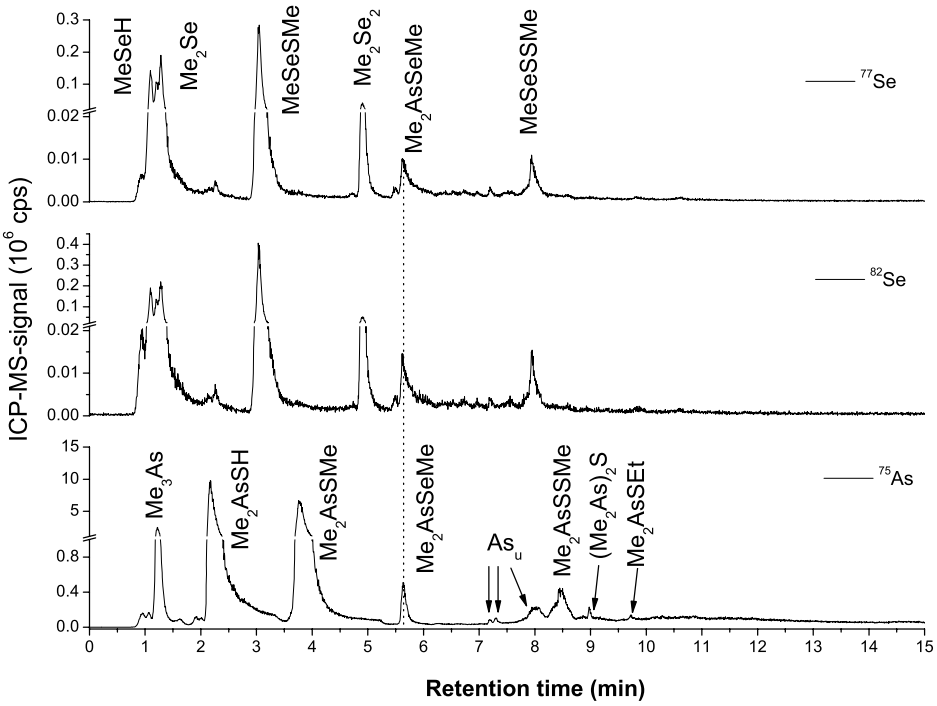

Fig. S 1: P&T-GC/EI-MS/ICP-MS chromatogram from a parallel batch as in **Error! Reference source not found.** is shown. Please note the simultaneous ^{75}As-, ^{77}Se and ^{82}Se-signal for Me$_2$AsSeMe. Small differences in retention times are caused by the use of constant flow instead of constant pressure. Furthermore, purging time was 7 min instead of 12 min. As$_u$: unidentified As-species

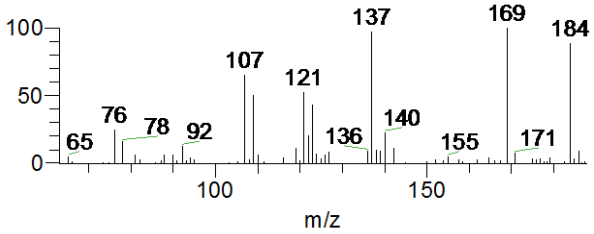

Fig. S 2: EI-MS-spectra of synthesized MeAs(SMe)$_2$

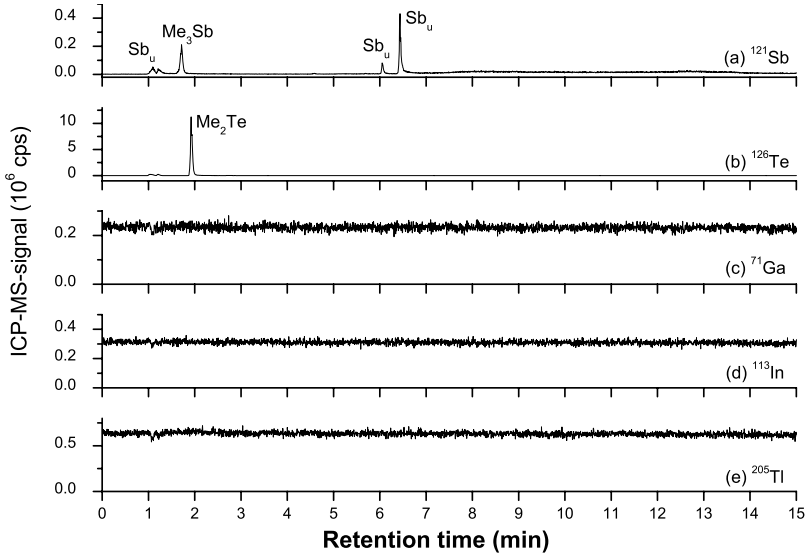

Fig. S 3: additional ICP-MS mass traces of the measurement in Fig. 1. (a&b) P&T-GC/ICP-MS chromatogram of volatile Sb resp. Te species from headspace from feces amended with inorganic metal(loid)s analysed and (c-e) ICP-MS –mass trace of the continuous internal standards used in this study showing the good plasma stability during GC-analysis. Sb_u and Te_u: unidentified species.