Electronic Supplementary Material (ESI) for Metallomics.

Figure S1

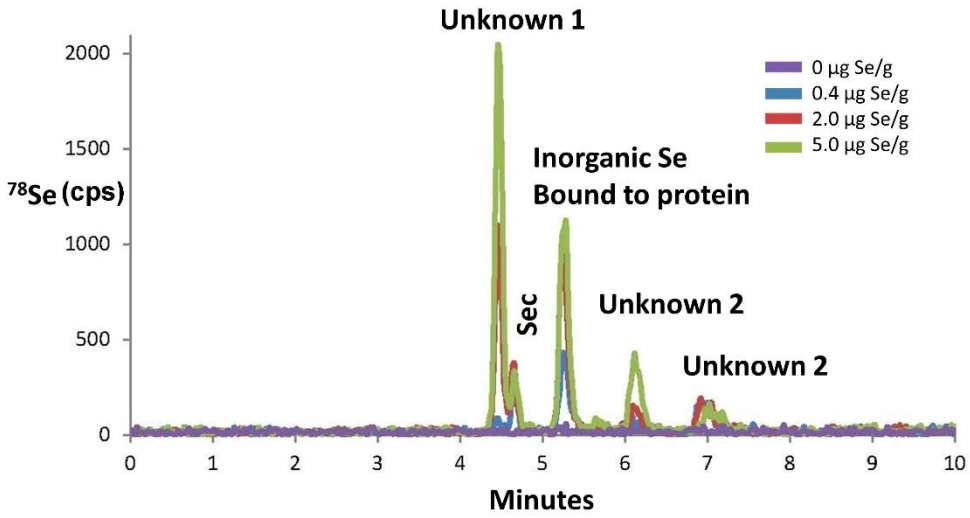
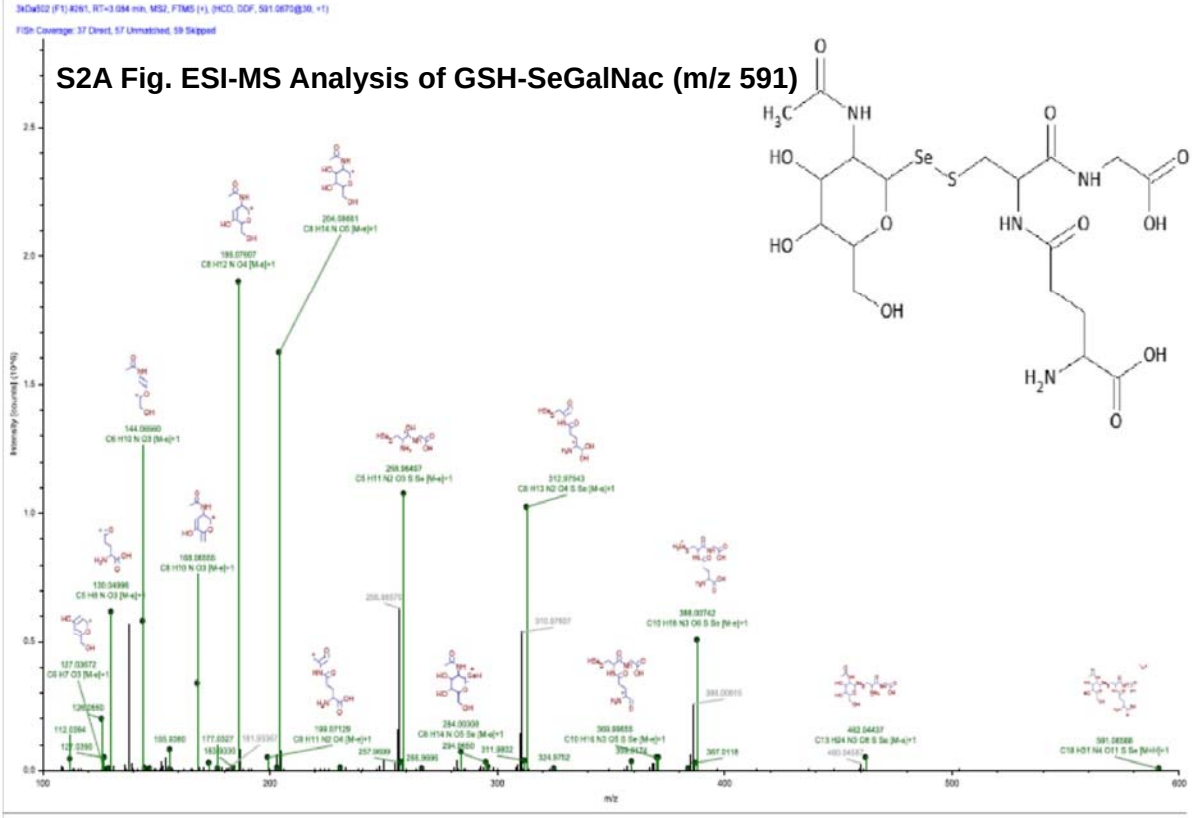
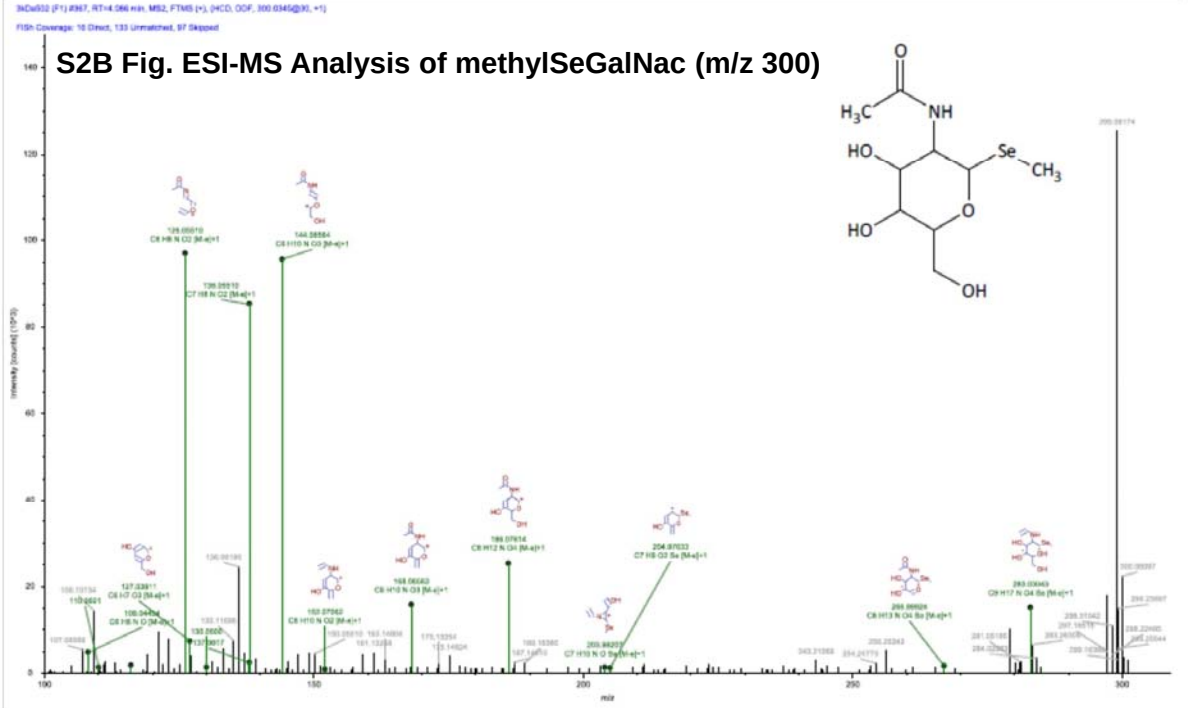


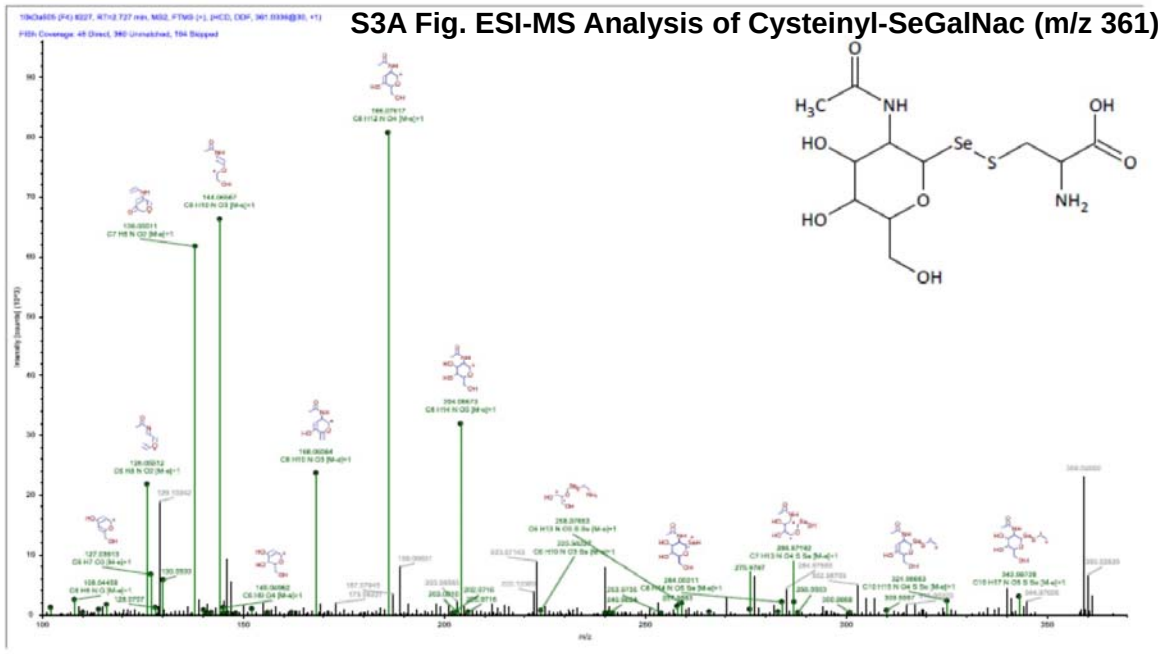
Fig. S1 RP HPLC-ICP MS chromatograms of proteinaceous Se species in turkey liver. Proteinaceous fractions from livers of turkeys fed 0, 0.4, 2.0, and 5 µg Se/g diet were derivatized with iodoacetamide, protease treated, and subjected to RP HPLC-ICP MS, with 30 min elution followed by ICP-MS for ^{78}Se; there were no peaks after 8 min. Detected peaks: 4.45 min, unknown; 4.66 min, Sec as CAM-Sec; 5.28 min, inorganic Se bound to protein, as $Se(CAM)_2$; 6.11 min, unknown; 7.0 min, unknown. Authentic SeMet elutes at 11.25 min, but was not detected in any sample. Peak identified for derivatized Sec and inorganic Se were confirmed by standard addition.

S2A Fig. ESI-MS Analysis of GSH-SeGalNac (m/z 591)

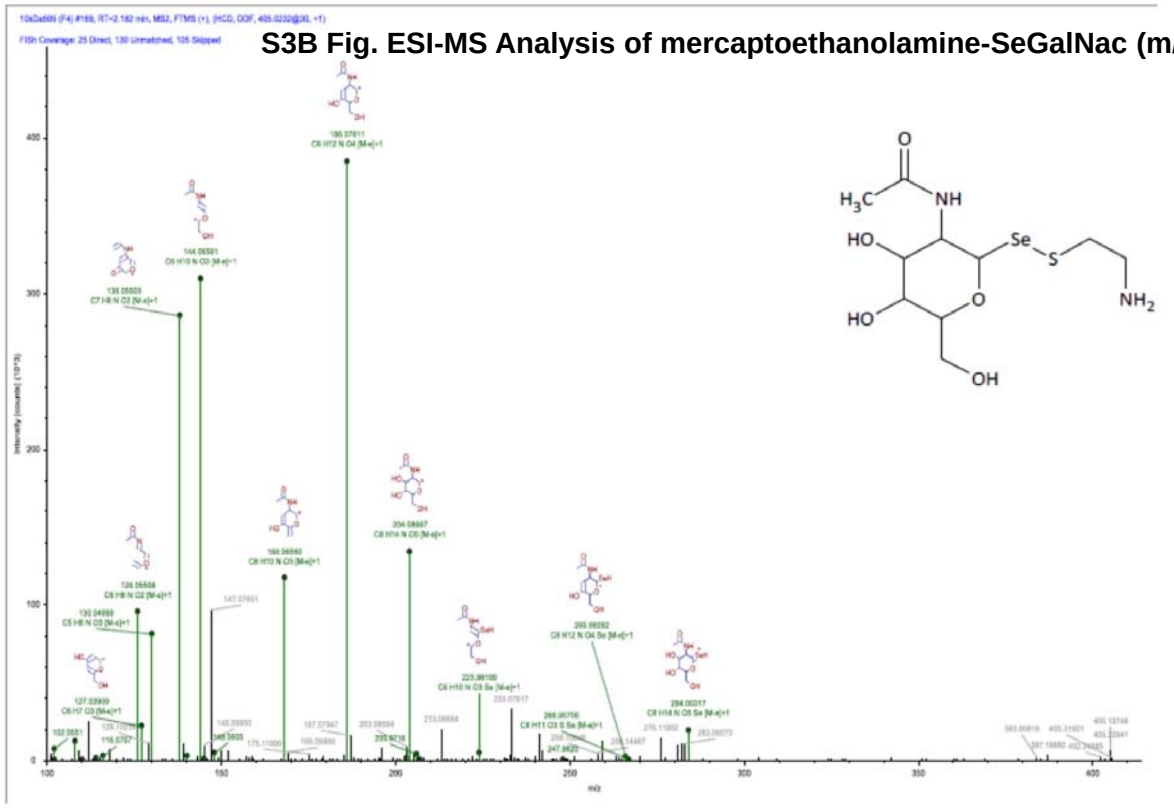


S2B Fig. ESI-MS Analysis of methylSeGalNac (m/z 300)





S3A Fig. ESI-MS Analysis of Cysteinyl-SeGalNac (m/z 361)



S3B Fig. ESI-MS Analysis of mercaptoethanolamine-SeGalNac (m/z 405)

S4 Fig. Structures of GSH-SeGalNac and fragments

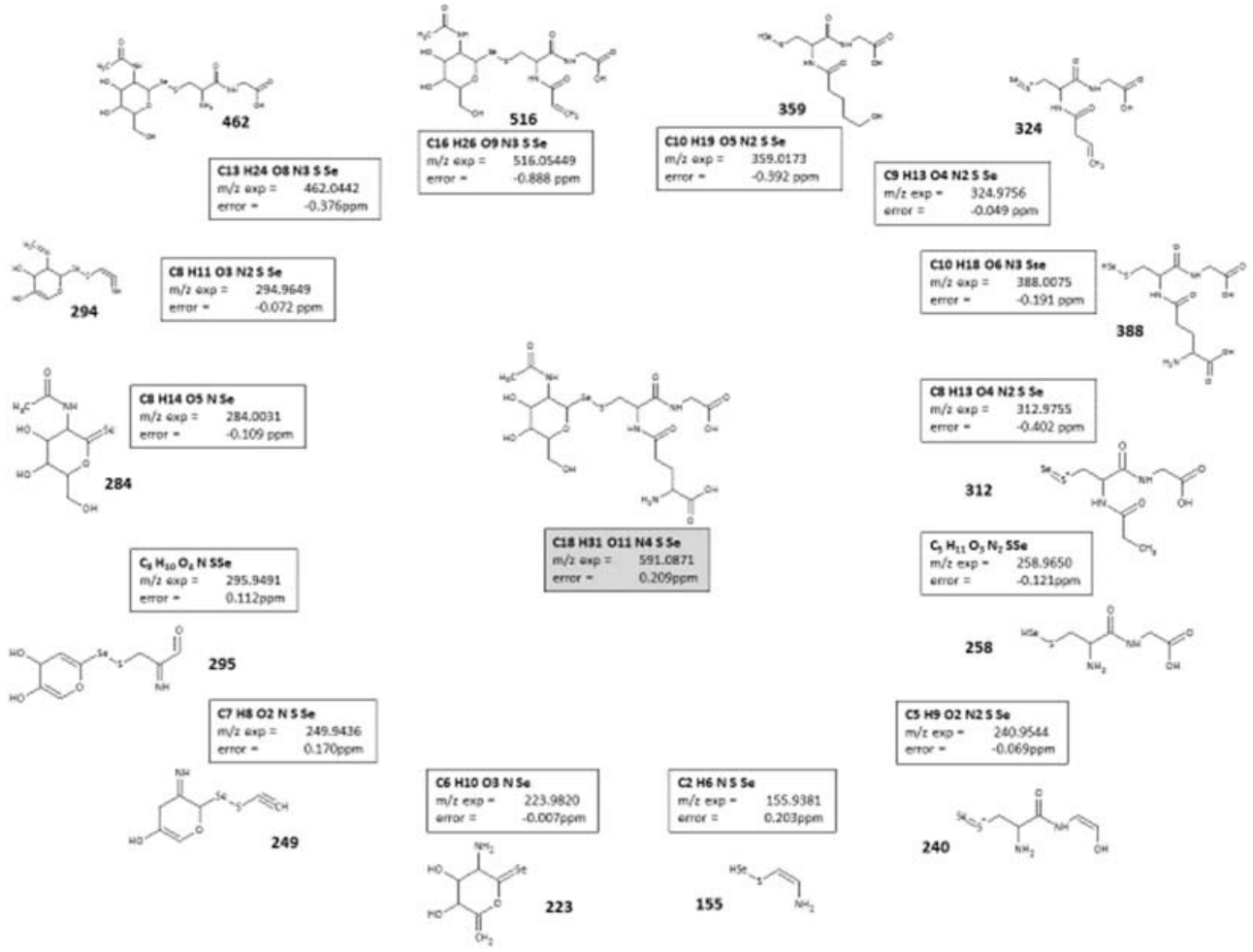


Table S1. Effect of high Se supplementation on liver Se

Se supplemented as selenite

Species	Diet Se (µg Se/g diet)	Liver Se (nmol/g)	Reference
Rat	0.005	0.26	Raines & Sunde 2011
	0.08	5.94	
	5	36.80	
Rat	0.02	0.25	Whanger & Butler 1988
	0.2	9.12	
	4	19.76	
Chicken	0.1	4.18	Ort & Latshaw 1978
	5	30.65	
Turkey	0	0.24	Taylor et al. 2019
	0.4	5.43	
	5	31.89	

Se supplemented as selenomethionine

Rat	0.02	0.25	Whanger & Butler 1988
	0.2	11.27	
	4	66.11	

1. Raines AM, Sunde RA 2011 Selenium toxicity but not deficient or super-nutritional selenium status vastly alters the transcriptome in rodents. BMC Genomics 12: 26. PMID: 21226930

2. Whanger PD, Butler JA 1988 Effects of various dietary levels of selenium as selenite or selenomethionine on tissue selenium levels and glutathione peroxidase activity in rats. J. Nutr. 118: 846-852.

3. Ort JF, Latshaw JD 1978 The toxic level of sodium selenite in the diet of laying chickens. J Nutr. 108: 1114-1120. PMID: 660303

4. Taylor RM, Bourget VG, Sunde RA 2019 High dietary inorganic selenium has minimal effects on turkeys and selenium status biomarkers. Poult. Sci. 98: 855-865. PMID: 30239950