

Abstract Submitted
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Evidence for mass dependent sulfur isotope fractionation revealed by Multiple Collector Inductively Coupled Mass Spectrometry YAHYA ALFAYFI, MICHAEL WIESER, M. MUSIANI, C. DUBESKY, None — The determination of the isotopic abundance of sulfur isotopes, in particular of S-33, using gas source mass spectrometry is complicated by the presence of oxygen isotopes and isotopologues of sulfurdioxide and the majority of the published studies report only S-33 isotope amount ratios. However, it is desirable to obtain S-33 data, which can provide important information on the nature of mass-dependent processes responsible for the cycling of sulfur. In this study, a high mass resolution MC-ICP-MS was used to measure the three most abundant stable isotopes of sulfur, free from oxygen interferences. The reliability of the analytical method was verified using the international reference materials from IAEA. In addition, hair samples collected from wild animals were measured for their sulfur isotopic composition as part of a large study to explore the diet of wolves in west central Alberta. The accuracy of the S-33 and S-34 isotope amount ratios should enable the elucidation of food sources in the region affected by industrial activities.

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None

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