

## 環境標準物質の亜鉛安定同位体分析

### Zinc stable isotope analysis of environmental reference materials

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Zinc has atomic number 30 and atomic mass 65.39. It is a trace element of terrestrial rocks and widely distributed throughout the lithosphere and biosphere. It is chalcophile features and has rich coordination chemistry, participates in a large number of important biological compounds and reactions. The zinc plays an important role as an essential trace metal in all living systems from bacteria to humans. Zn has five stable isotopes <sup>64</sup>Zn, <sup>66</sup>Zn, <sup>67</sup>Zn, <sup>68</sup>Zn, and <sup>70</sup>Zn. Their isotopic fractionation could provide valuable information about environmental processes, especially in biological processes.

With the advent of multi-collector ICP-MS, it is possible to measure the precise value of <sup>66</sup>Zn/<sup>64</sup>Zn in Zn solution. To promote the environmental stable isotope traceability, RIHN is desired to determine the isotope ratios of zinc for environmental reference materials with high precision and accuracy, rapidness, and convenience.

Here, I report a simple and efficient method for zinc isotope analysis. The various environmental samples over 20 types were used for the study. All samples have purified with an anion exchange resin to separated Zn and Fe at a time. Zinc isotope ratios were measured by MC-ICP-MS (NEPTUNE plus) with AA-ETH, which is a new zinc isotopic standard solution reported by Archer et al. (2017). The mass bias correction conducted with Cu standard solution (NIST SRM 976).

キーワード：安定同位体、亜鉛、環境標準物質

Keywords: stable isotope , Zinc, environmental reference materials