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Showcasing research from Dr. Guosheng Yang's laboratory, Institute for Radiological Science, National Institutes for Quantum Science and Technology, Chiba Prefecture, Japan.

^{90}Sr bioassay in small-volume urine by ICP-MS/MS with CO_2 as the reaction gas

For rapid public screening after a large-scale radiological/nuclear accident, we developed a novel ^{90}Sr bioassay for small-volume urine samples (10–400 mL) using ICP-MS/MS. After organic matter decomposition by HNO_3 , stacked DGA and Sr resin cartridges were used for chromatographic separation and purification of Sr. CO_2 proved to be a better reaction gas than O_2 , to mitigate isobaric/polyatomic interferences, especially those caused by Zr and Ge. The method detection limit was 0.978 pg/L (5 Bq/L) in 10 mL urine, with a reasonable throughput (~6 h for 12 samples).

As featured in:



See Guosheng Yang *et al.*,
J. Anal. At. Spectrom., 2023, **38**, 2562.