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## Optimization of a methodology to determine $^{90}\text{Sr}$ in biota and water samples by ICP MS QQQ and LSC

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$^{90}\text{Sr}$  ( $t_{1/2} = 28.80\text{yr}$ ) has a relatively long life and due to its chemical similarity to calcium,  $^{90}\text{Sr}$  accumulates within the skeletal structure of animals and some plants. The aim of this work is optimize a methodology to determine stable Sr and  $^{90}\text{Sr}$  in environmental samples including plants, insects, animals and water. The  $^{88}\text{Sr}$  was measured by ICP-MS Triple Quad (8800, Agilent Technologies) and  $^{90}\text{Sr}$  by Liquid Scintillation Spectrometer (Quantulus 1220, Perkin Elmer). The Sr was separated from the matrix using the specific Sr EiChrom single resin method (Horwitz 1992). We modified this method to improve the yield and reproducibility of the results. Our optimization focused on adjusting the nitric acid concentration in samples, ( $8\text{mol L}^{-1}$ ) and the use of higher concentrations of hydrochloric acid ( $6\text{mol L}^{-1}$ ) to successfully elute the Sr from the resin. The proposed optimization showed that it is possible to obtain Sr recovery of about 92% if  $6\text{mol L}^{-1}$  HCl is used as an elution solution.

Horwitz, E. P. C. R. D. M. L. (1992). "A Novel Stronium-Selective Extraction Chromatographic Resin." Solvent Extration and Ion Exchange 210(2): 313-336.

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