

Application of extraction chromatography to the separation of Sc, Zr and Sn isotopes from target materials

Authors : Steffen Happel

Abstract : Non-standard isotopes such as Sc-44/47, Zr-89, and Sn-117 are finding increasing interest in radiopharmaceutical applications. Methods for the separation of these elements from typical target materials were developed. The methods used in this paper are based on the use of extraction chromatographic resins such as UTEVA, TBP, and DGA resin. Information on the selectivity of the resins (Dw values of selected elements in HCl and HNO₃ of varying concentration) will be presented as well as results of the method development such as elution studies, chemical recoveries, and decontamination factors. Developed methods are based on the use of vacuum supported separation allowing for fast and selective separation.

Keywords : elution, extraction chromatography, radiopharmacy, decontamination factors

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