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## Characterisation of a Cu selective resin for use in the production of Cu isotopes for medical purpose

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Cu isotopes (e.g. Cu-64) increasingly find use in radiopharmaceutical applications; accordingly fast, reliable and easily automatable methods for the production of these isotopes are of great interest. A Cu selective extraction chromatographic resin (CU Resin, Triskem International) developed for the fast and selective separation of Cu was characterized and a method for the separation of Cu from different target materials was developed. The characterization of the resin included the determination of  $k'$  values of Cu, Ni, Zn and other potentially interfering elements and impurities for varying acids and pH values as well as the influence of macro amounts of Ni and Zn on the extraction of Cu. Based on the obtained results, a method for the separation of Cu, and its purification from irradiated Ni or Zn targets was developed and tested on simulated Ni and Zn targets, and on an irradiated natural Ni target. Cu yields and decontamination factors for potential interferents have been determined, and the conversion of the Cu eluate to lower acid concentrations studied for the developed method. It could be shown that the CU resin has high selectivity over the tested interferents and that Cu can be recovered with high yield and purity in a small volume of 8M HCl within few minutes separation time.

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