



# AULA VIRTUAL de RADIOFARMACIA

Plataforma Virtual de Formación Continua en Radiofarmacia

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## Lectura recomendada

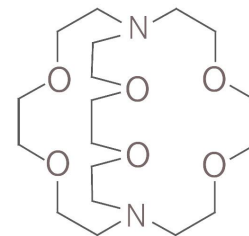
### Rapid Detection of the Residual Kryptofix 2.2.2 Levels in [<sup>18</sup>F]-Labeled Radiopharmaceuticals by Ultra-Performance Liquid Chromatography Tandem Mass Spectrometry

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#### Abstract

A fast and sensitive ultra-performance liquid chromatography-tandem mass spectrometric (UPLC/MS/MS) method was developed and validated for determination of the residual levels of Kryptofix 2.2.2 (K222) in [<sup>18</sup>F]-labeled radiopharmaceuticals. The analytical time was only 3 min, and the injection volume was 5  $\mu$ L. An electrospray ionization source was used in the positive mode (ESI<sup>+</sup>) for UPLC/MS/MS. The analytical measurements were performed in the multiple reaction monitoring (MRM) mode. The calibration curve at the spiked concentrations of 2–500 ng/mL for K222 showed good linearity. The intra- and inter-day precisions were not more than 5%. The accuracy satisfied the requirement of quality control analysis, the recoveries were found to be 80–120%. This method was successfully applied to detect the residue of K222 in [<sup>18</sup>F]-fluorodeoxyglucose [<sup>18</sup>F]FDG, [<sup>18</sup>F]-fluoromisonizole[<sup>18</sup>F]FMISO, 3'-deoxy-3'-[<sup>18</sup>F]-fluorothymidine [<sup>18</sup>F]FLT, and two new [<sup>18</sup>F]-labeled radiopharmaceuticals 4-[-(2-[<sup>18</sup>F]fluoroethoxy) methyl]-1-[2-(2-methyl-5-nitro-1H-imidazol-1-yl) ethyl]-1H-1,2,3-triazole (named as <sup>18</sup>F-BNU-1) and 4-[-(2-[<sup>18</sup>F]fluoroethoxy) methyl]-1-[2-(2-nitro-1H-imidazol-1-yl) ethyl]-1H-1,2,3-triazole (named as <sup>18</sup>F-BNU-2) produced in our lab.





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