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Preparation and Quality Control of a Novel Radiolabeled Complex of 166ho for the Treatment of Somatostatin Receptor Expressing Tumours

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Abstract : Peptide receptor radionuclide therapy is nowadays used for the treatment of various abnormalities with somatostatin receptors. In this study, 166Ho-DOTATOC was prepared and the best conditions for its radiolabeling was obtained. For this purpose, a certain of DOTATOC was added to a vial containing 166Ho. various experiments by varying ligand concentration, pH, temperature and time were performed to determine the best conditions. Radiochemical purity of the complex was assessed by instant thin layer chromatography method utilizing 0.9% NaCl as the mobile phase. 166Ho-DOTATOC was prepared with radiochemical purity of higher than 95% at the optimized condition (pH=4, temperature: 95° C, time:30 min). In 0.9% NaCl, free Ho cation was developed at Rf of 0.8 while the complex was remained at the front of the paper.

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