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Optimization and Evaluation of 177lu-Dotatoc as a Potential Agent for Peptide Receptor Radionuclide Therapy

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Abstract : High expression of somatostatin receptors on a wide range of human tumours makes them as potential targets for peptide receptor radionuclide tomography. A series of octreotide analogues were synthesized while [DOTA-DPhe1, Tyr3]octreotide (DOTATOC) indicated advantageous properties in tumour models. In this study, 177Lu-DOTATOC was prepared with the radiochemical purity of higher than 99% in 30 min at the optimized condition. Biological behavior of the complex was studied after intravenous injection into the Syrian rats. Major difference uptake was observed compared to 177LuCl3 solution especially in somatostatin receptor-positive tissues such as pancreas and adrenal.

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