

## Optimization and Evaluation of $^{177}\text{Lu}$ -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,  $^{177}\text{Lu}$ -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  $^{177}\text{LuCl}_3$  solution especially in somatostatin receptor-positive tissues such as pancreas and adrenal.

**Keywords :** Biodistribution,  $^{177}\text{Lu}$ , Octreotide, Syrian rats

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