

Time Dependent Biodistribution Modeling of ^{177}Lu -DOTATOC Using Compartmental Analysis

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Abstract : In this study, ^{177}Lu -DOTATOC was prepared under optimized conditions (radiochemical purity: > 99%, radionuclidic purity: > 99%). The percentage of injected dose per gram (%ID/g) was calculated for organs up to 168 h post injection. Compartmental model was applied to mathematical description of the drug behaviour in tissue at different times. The biodistribution data showed the significant excretion of the radioactivity from the kidneys. The adrenal and pancreas, as major expression sites for somatostatin receptor (SSTR), had significant uptake. A pharmacokinetic model of ^{177}Lu -DOTATOC was presented by compartmental analysis which demonstrates the behavior of the complex.

Keywords : biodistribution, compartmental modeling, ^{177}Lu , Octreotide

Conference Title : ICCPT 2018 : International Conference on Cancer Pharmacology and Treatment

Conference Location : Paris, France

Conference Dates : June 25-26, 2018