

Biodistribution Studies of ^{177}Lu -DOTATOC in Mouse Tumor Model: Possible Utilization in Adenocarcinoma Breast Cancer Treatment

Authors : M. Mousavi-Daramoroudi, H. Yousefnia, F. Abbasi-Davani, S. Zolghadri, S. Kakaei

Abstract : Despite the appropriate characteristics of ^{177}Lu and DOTATOC, to our best knowledge, the therapeutic benefit of ^{177}Lu -DOTATOC complex in breast cancer has not been reported until now. In this study, biodistribution of ^{177}Lu -DOTA-TOC in mouse tumor model for evaluation of possible utilization of this complex in breast cancer treatment was investigated. ^{177}Lu was prepared with the specific activity of 2.6-3 GBq.mg⁻¹ and radionuclidic purity higher than 99%. The radiolabeled complex was prepared in the optimized conditions with the radiochemical purity higher than 99%. The final solution was injected to the BALB/c mice with adenocarcinoma breast cancer. The biodistribution results showed major accumulation in the kidneys as the major excretion route and the somatostatin receptor-positive tissues such as pancreas compared with the other tissues. Also, significant uptake was observed in tumor even in longer time after injection. According to the results obtained in this research study, somatostatin receptors expressed in breast cancers can be targeted with DOTATOC analogues especially with ^{177}Lu -DOTATOC as an ideal therapeutic agent.

Keywords : ^{177}Lu , adenocarcinoma breast cancer, DOTATOC, BALB/c mice

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020