World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:14, No:12, 2020

Preparation and Quality Control of 68Ga-1,2-Propylene Di-Amino Tetra (Methylenephosphonic Acid)

Authors : N. Tadayon, H. Yousefnia, S. Zolghadri, A. Ramazani, A. R. Jalilian

Abstract : Bone metastases occur in many patients with solid malignant tumors. Recently, 1,2 propylene di-amino tetra methylenephosphonic acid (PDTMP) has been introduced as a suitable carrier in the development of therapeutic bone-avid radiopharmaceuticals. In this study, due to the desirable characteristics of 68Ga, 68Ga-PDTMP was prepared. 68Ga was obtained from SnO2 based generator. A stock solution of PDTMP was prepared by dissolving in 2 N NaOH. A certain volume of the stock solution was added to the vial containing 68GaCl3 and the pH of the mixture was adjusted to 4 using HEPES. Radiochemical purity of the radiolabelled complex was checked by thin layer chromatography. 68Ga-PDTMP was prepared in only 15 min with radiochemical purity of more than 98%. This new bone-seeking complex can be considered as a good candidate of PET-based radiopharmaceutical for imaging of bone metastases.

Keywords : bone metastases, Ga-68, imaging, PDTMP
Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development
Conference Location : Chicago, United States
Conference Dates : December 12-13, 2020