

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

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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 ^{68}Ga , ^{68}Ga -PDTMP was prepared. ^{68}Ga was obtained from SnO_2 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 $^{68}\text{GaCl}_3$ and the pH of the mixture was adjusted to 4 using HEPES. Radiochemical purity of the radiolabelled complex was checked by thin layer chromatography. ^{68}Ga -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

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