عنوان مقاله:

Production, quality control and biological evaluation of 153Sm-TTHMP as a possible bone palliation agent

محل انتشار:

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خلاصه مقاله:

Introduction: Various bone palliative therapeutic agents have been developed and widely used for bone metastasis such as 153Sm-EDTMP. In this study, production, quality control and biodistribution studies of a newly developed therapeutic compound have been presented followed by imaging studies in wild-type rodents. Methods: 153Sm-TTHMP was prepared starting from 153Sm-SmCl3, prepared by neutron activation of an enriched 152Sm sample (purity > 98%), and in-house synthesized TTHMP in 1h at 25°C followed by stability tests, partition coefficient determination and biodistribution studies of in wild-type rodents using scarification and SPECT imaging. Results: The radiolabled Sm complex was prepared in high radiochemical purity (> 99%, ITLC) and specific activity of 278 GBq/mmol and demonstrated significant stability at 4, 25 and 37°C (in presence of human serum). Initial biodistribution data showed significant bone accumulation of the tracer in 48h. Conclusion: 153Sm-TTHMP can be a potential candidate for bone pain palliation therapy in skeletal metastases, although further biological studies in other .mammals is still needed

کلمات کلیدی:

Sm-153, TTHMP, Radiopharmaceutical, Therapy, Biodistribution, Imaging