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Production, Quality Control and Biodistribution Assessment of 166 Ho-BPAMD as a New Bone Seeking Agent

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Abstract : The aim of this study was the preparation of a new agent for bone marrow ablation in patients with multiple myeloma. 166Ho was produced at Tehran research reactor via 165Ho(n,γ)166Ho reaction. Complexion of Ho-166 with BPAMD was carried out by the addition of about 200µg of BPAMD in absolute water to 1 mci of 166HoCl3 and warming up the mixture 90 0C for 1 h. 166Ho-BPAMD was prepared successfully with radio chemical purity of 95% which was measured by ITLC method. The final solution was injected to wild-type mice and bio distribution was determined up to 48 h. SPECT images were acquired after 2 and 48 h post injection. Both the bio distribution studies and SPECT imaging indicated high bone uptake, while accumulation in other organs was approximately negligible. The results show that 166Ho-BPAMD has suitable characteristics and can be used as a new bone marrow ablative agent.

Keywords : bone marrow ablation, BPAMD, 166Ho, SPECT
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