Study of Labeling and Stability of ^{188}Re-NTMP Complex

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ABSTRACT

Labeling of nitrilotris(methylene phosphonic)acid (NTMP) with rhenium-188 using stannous chloride as a reducing agent was investigated. Dependence of the yield of the ^{188}Re-NTMP complex on the concentration of the reducing agent, pH, reaction time, temperature, ascorbic acid and amount of carrier added was studied. Under optimum conditions, the labeling yield of ^{188}Re-NTMP complex was 90% for the carrier-free ^{188}Re but with the carrier-added ^{188}Re the labeling yield was more than 97%. Furthermore, the stability of the ^{188}Re-NTMP complex against pH change and dilution with saline was also studied. It was found that the addition of carrier stabilized the ^{188}Re-NTMP complex against pH change and dilution.

Key Words: Rhenium-188/ NTMP/ Stability/ Biodistribution/Bone Uptake.