

Chemical properties of technetium-99m-DL-homocysteine, a possible tumor-imaging agent

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The chemical properties of ^{99m}Tc -DL-homocysteine (^{99m}Tc -Hcy) showing high accumulation in several experimental tumors were investigated. The form of tumor-tropic ^{99m}Tc -Hcy was a polymeric complex which appeared at void volume on Sephadex G-15 by eluting with 5 mM Hcy. This complex changed into smaller complexes of ca. 600 molecular weight in the presence of 150 mM NaCl and 5 mM Hcy, suggesting that ^{99m}Tc -Hcy was a complex composed of smaller polymers which are weakly bound together by an ionic bond. The complex showed a negative charge. The Hcy/Tc molar ratio in the complex was approximately 2 and no Sn was detected.

Key words: ^{99m}Tc -DL-homocysteine, DL-homocysteine, Chemical property, Tumor affinity, Tumor-imaging agent