

**$^{99m}\text{Tc-S-Colloid}$  for Bone Marrow Scanning Agent**

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The distribution of radioactive colloid to bone marrow reticuloendothelial system is affected by various factors, among which, we take out mainly a size of colloid particle and prepared  $^{99m}\text{Tc}$ -sulfur colloid for bone marrow scanning.

**Method:**

Our preparation method of  $^{99m}\text{Tc}$ -sulfur colloid for bone marrow scanning is characterized by low concentration of sodium thiosulfate of less than one-third of that of the conventional method in the presence of gelatin for obtaining smaller colloidal particles.

We administered this  $^{99m}\text{Tc}$ -sulfur colloid,  $^{198}\text{Au}$  colloid (particle size  $5\text{m}\mu$  and  $20\text{--}50\text{m}\mu$ ) and other  $^{99m}\text{Tc}$ -sulfur colloid intravenously to

each group of five rabbits and measured the radioactivities of each organs and calculated the ratio between bone marrow and other organ per mg—tissue weight.

**Result:**

This  $^{99m}\text{Tc}$ -sulfur colloid for bone marrow scanning has distributed more in the bone marrow than in the case of other colloidal compounds and its ratio of accumulation in the bone marrow is 1.2–2.2 times more than that in the liver per mg—tissue weight.

Dobson and Zilvermit, et al. reported that colloid of smaller particle size accumulated more in bone marrow than in liver, however such a case was not recognized in our data on the colloidal particle size  $5\text{m}\mu$  and  $20\text{--}50\text{m}\mu$ .

**A Tumor-Specific Localizing Agents for Radioisotope Image  
—The Preparation of Labelled Bleomycin and  
Its Distribution in Tumor Bearing Mice—**

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Bleomycin (BLM) is a glycopeptide known as a anticancer antibiotics. In chemically BLM binds to copper ions and also it is expected to bind other metal ions chelatechemically. In biologically it is reported to localize in effective tumor tissue.

We tried to labelled BLM with radioisotopes,  $^{59}\text{Fe}$ ,  $^{65}\text{Zn}$ ,  $^{64}\text{Cu}$ ,  $^{59}\text{Co}$  and  $^{67}\text{Ga}$ .

$^{65}\text{Zn}$ ,  $^{64}\text{Cu}$ ,  $^{57}\text{Co}$ , binded easily in acidic aqueous solution.  $^{59}\text{Fe}$  and  $^{67}\text{Ga}$  did not bind so easily. Binding constants were measured with ionic exchanger. In this results BLM- $^{65}\text{Zn}$  had the largest binding constant in these complexes.

Labelled BLM were detected by thinlayer chromatography, and free radioisotopes were