nuclides, the burden of radiopharmaceutical formulation in hospitals is increasing rapidly. The potential for formulation errors was recognized but there was no agreement reached on how a laboratory can develop the capability for good manufacturing processes. To assure production of safe and effective radiopharmaceuticals in every nuclear-medical laboratory, the following alternatives were presented: A number of participants suggested that pharmaceutical manufacturers provide "preparation kits" with pretested components. Others thought that by decentralizing the pharmaceutical industry, short-lived isotopes could be supplied conveniently. However, an industry representative questioned these recommendations, pointing out that industry can solve the problem if it is given an adequate description of the formulation problem.

One work group proposed that the Society of Nuclear Medicine form a committee to establish uniform manufacturing standards and quality-control procedures for laboratories. The committee could provide basic principles or guidelines that could be easily understood by laboratory personnel. This endeavor would require intimate cooperation between industry and the Society.

Since hospital pharmacists are well trained in dose formulation of injectibles, they can perform effectively in a nuclear-medical laboratory if they have basic training in radiological sciences.

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DETECTION OF TUMORS BY SCANNING

When reporting results of phantom experiments on detection of brain tumors by scanning, authors frequently emphasize the importance of the ratio of tumor-to-brain concentration for detecting the tumor. In fact the absolute concentration is also very important as can be demonstrated easily by scanning phantoms with the same "tumor"-to-"brain" concentration ratios but different absolute concentrations. Furthermore the absolute concentration used is often unrealistically high so that smaller phantom tumors are detected than will be possible in practice.

Telander and Loken (*1*) state that their data from phantom experiments "indicate slightly poorer resolution for scintigraphic systems than predicted by the calculations of Beck (*2*) and Matthews (*3*)." In fact, for the same tumor-to-brain concentration ratio, their results indicate that smaller tumors can be detected than predicted by the calculations of Matthews. Thus Telander and Loken find that for a tumor-to-brain ratio of 10:1 a midline tumor of about 1.7 cm diameter can be detected with ^{99m}Tc (Fig. 3 of their paper in ref *1*), whereas Matthews calculates that only tumors greater than about 2 cm in diameter should be seen (*3*). This discrepancy is to be expected because Telander and Loken use absolute phantom concentrations about ten times greater than those considered appropriate by Matthews. These high concentrations were said to give the same counting rate as obtained *in vivo*, but with the camera the latter would be mainly due to muscle radioactivity and not brain radioactivity. Of course there are also a number of other factors involved, such as collimator efficiency, which are not specified by Telander and Loken.

Telander and Loken also quote both Long and colleagues (*4*) and Matthews (*3*) as evidence that ^{99m}Tc gives tumor-to-brain concentration ratios of 20:1. In fact, this value is that found by Long and colleagues (*4*); Matthews and Mallard find a lower ratio of 12:1. The difference is readily explained because Long *et al* perfused out the blood before measuring tumor and brain radioactivities so that their ratios are higher than for the whole organ *in vivo* due to the small blood volume per unit weight of the brain.

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