

prepare our freeze-dried kit, but rather would obtain it from a suitable supplier when it becomes available. Under such circumstances, we still believe our kit affords a simple efficient labeling procedure.

Gutkowski et al. are quite right to question our figure of 90% localization in the spleen. This was incorrect: we should have stated that 90% of the activity that accumulated in the spleen did so in 1 hr or less. We did have an indication, however, when we switched from older methods using large volumes of heat-damaged red cells to the kit (which uses smaller volumes) of what appeared to be a more rapid clearance and localization. In a series of six patients with blood disorders, mostly chronic lymphocytic leukemia, we did get an indication of different clearance rates on individuals who received both 0.5 ml and 5.0 ml of heat-damaged cells. Currently, the significance of this is not known. Gamm et al. (1), in Germany have reported saturating the reserve capacity of the spleen for sequestered heat-damaged cells by administering as little as 4–5 ml in some patients.

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REFERENCE

1. GAMM H, FISCHER J, WOLF R: Die Kapazitätsprüfung der Milz, ein Beispiel für die Funktionsprüfung des RES. *Strahlentherapie* 72: 224–231, 1972

Triiodothyronine by the Ames Kit

We read with much interest the article (1) by Howorth and Marsden on the radioimmunoassay of triiodothyronine by the Ames kit. Since we have presented a similar work (2) on the evaluation of this kit, we would like to comment on certain similarities and dissimilarities between our results and those reported by the authors. Both studies agree on the overlap between euthyroid and hypothyroid ranges, clear discrimination between euthyroid and hyperthyroid ranges, and high T_3 levels in euthyroid subjects with elevated TBG. However, the inter- and the intra-assay variations reported by Howorth and Marsden are lower than ours. The coefficient of variation often varies with the concentration of the analyte tested. As the working concentrations were not reported in the article, it is difficult to compare their precision values with ours. The authors state that the standard curve is linear over a broad range. In our experience, however, the curve, if plotted according to the instructions given by the manufacturer, tends to flatten itself in the high range, especially when more than three points are included.

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2. BALACHANDRAN S, MOSES DC, SISSON JC, et al.: A simplified radioimmunoassay for triiodothyronine: Evaluation of a new commercial kit. *J Nucl Med* 16: 514, 1975

Reply

We wish to comment on the differences noted by Balachandran between our results and those of the Ann Arbor team.

Inter- and intra-assay variation. The mean serum T_3 concentration in our intra-batch study was 4.0 nmole/liter (2.7 ng/ml), and that in the inter-batch study was 2.8 nmole/liter (1.9 ng/ml). Thus, in both cases the assay was being studied at a higher concentration range than in the Michigan study, which could account for the different results found there.

Linearity and range of the assay. In an earlier version of our paper we collected data for T_3 standards from 0 to 9 nmole/liter (0–6 ng/ml). As can be seen from Fig. 1, the

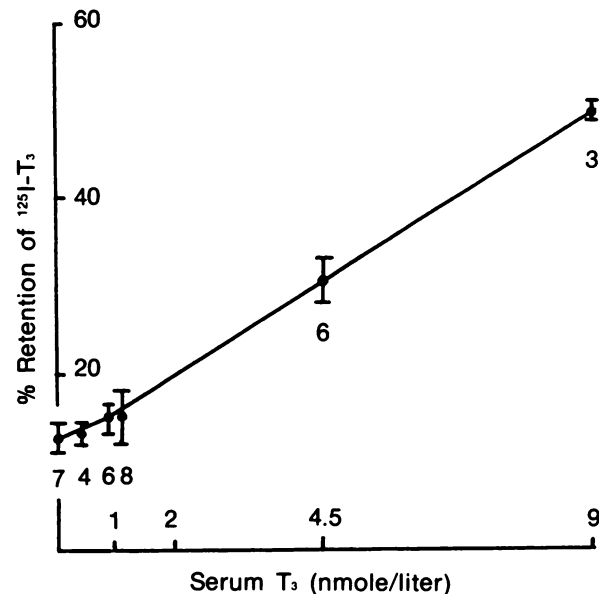


FIG. 1. Percent retention of $^{125}I-T_3$ in Ames serum T_3 determination as function of serum T_3 concentration. Numerals under data points indicate number of individual determinations and bars indicate range.

assay was linear using standards in the range recommended by Ames, namely, 1.1–9.0 nmole/liter (0.75–6.0 ng/ml). Below 1.1 nmole/liter (0.75 ng/ml), although the assay was almost linear, there was considerable overlap, indicating poor precision in the hypothyroid range. Ames suggests taking 0.4 ml of serum in suspected hypothyroidism and 0.1 ml of serum in thyrotoxicosis in order to get results from the linear and most sensitive part of the assay (1.1–9.0 nmole/liter).

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Summation Peaks in a Well Scintillation Counter

A recent article on ^{125}I by Hudson, Glass, and Water (1) stated that "summing of this magnitude is not common