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Reply

The methods of synthesis of 6-iodomethylcholesterol reported by Scott et al. (*1*) were obvious, insignificant modifications (if any) that had been discussed by Kojima et al. and myself at the presentation of our respective findings at the 1975 Annual Meeting of the Society in Philadelphia.

Neither Kojima et al. (*2*) nor our group at Michigan (*3*) accepted the claim that the NMR scans proved unequivocally the purity of 6-iodomethylcholesterol we had discovered. Before and after our publications (*3,4*), we were working on different ways of identifying impurities and toward new synthetic methods for 6-iodomethylcholesterol that is now established.

There is no doubt in our minds that ^{13}C Nuclear Magnetic Resonance is probably the ultimate tool in establishing the purity of a compound, but at the time we isolated the 6-iodomethylcholesterol, we felt that the sample we had was pure enough to obtain an NMR, a mass spectrum, a melting point, and chromatographic data that warranted its identification and publication.

It is always pleasant to know that other researchers have continued to confirm the pioneering findings at Michigan and have worked diligently to improve our simple synthetic procedures to obtain purer end products.

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Gonadal Radiation Dose and its Genetic Significance in Radiation Therapy of Hyperthyroidism

In their recent paper (*1*) concerning radiation dose to the gonads resulting from the therapeutic dose of ^{131}I in hyperthyroidism, Robertson and Gorman have estimated the ovarian dose as 0.2 rad/mCi administered. They assumed a thyroidal uptake of 80% of the dose and average values for urinary excretion and release rate of thyroidal hormone of 7.2%/hr and 0.18%/hr, respectively.

We have used thermoluminescent dosimeters of LiF and Ca/Dy sulfate, attached to copper intrauterine contraceptive devices, to measure directly the dose to the uterus in a series of patients with Graves' disease. The dose-meters were inserted just before the administration of ^{131}I and were retrieved 1 month later. This method measures only the gamma-radiation dose to the uterus and neglects that resulting from beta particles.

The mean result obtained from our first seven observations was 0.145 (±0.10) rad/mCi administered.

The mean thyroidal uptake in our patients was 74 ± 7%. To compare our results with the calculations of Robertson and Gorman, we assume a gamma dose to the ovaries equal to the dose to the uterus. Furthermore, one must subtract the self irradiation by beta particles from the calculated dose, for this was not measured in our in vivo dosimetry. This component is 0.086 rad/mCi, and the calculated gamma dose to the ovaries is therefore 0/204 − 0.086 = 0.118 rad/mCi. This value is in fair agreement with our measured results, and we feel that our in vivo findings support the validity of the assumptions made by Robertson and Gorman in their calculations.

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Reply

We appreciate the comments by Philippon and Briere relating their measurements of the uterine dose to our calculations of the ovarian dose. Further measurements of this nature as a cross check on radiation dose calculations are to be encouraged.

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Chromatography of ^{99m}Tc Labeled Radiopharmaceuticals

The article by Colombetti, et al. (*1*) confirms our own findings with the MAC-1 kit in the testing of water soluble radiopharmaceuticals. The MAC-1 kit indicates high values