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BROOKHAVEN NATIONAL LABORATORY

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MEMORANDUM

R DATE: September 6, 1962

REPOSITORY Records Holding Area-866444
COLLECTION Protocols-Clinical
BOX No. 4
FOLDER HUMAN PROTOCOLS 1950-1963

TO: Committee for the Use of Isotopes in Human Subjects.
FROM: L.K. Dahl, M.D., L.C. Lax, M.D., and E. Schackow, M.D. L.S.
SUBJECT:

Request for permission to use Hg^{203} in tracer amounts.

Request is hereby made for permission to use Hg^{203} in tracer amounts in selected hospitalized patients.

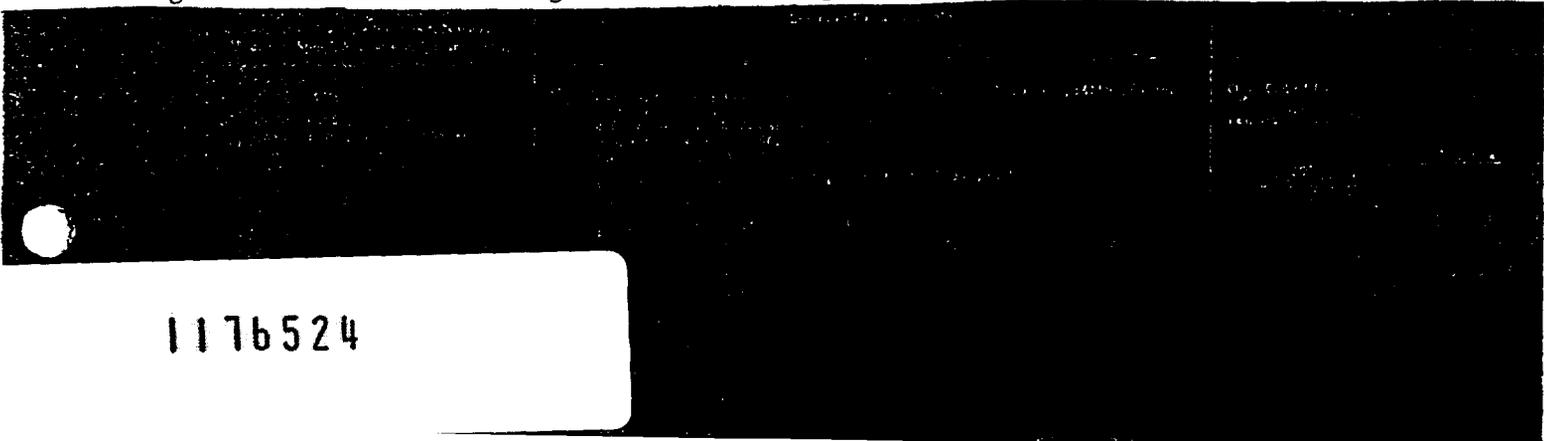
The isotope will be used to study renal function; Renoscans will be produced, which have proven particularly useful in evaluating the functional state of renal tissue distal to arterial lesions, detecting small areas of viable tissue, and revealing space-occupying lesions in the kidneys.

Hg^{203} is supplied as Chlormerodrin- Hg^{203} . In view of the high specific activity of Hg^{203} (44 microcuries per milligram) no consideration need be given to any pharmacological problems relative to this particular mercury compound. Of course, the general contra-indications for the application of mercurials are upheld. They are: acute and chronic nephritis.

Physical properties of Hg^{203} :

PARTIAL DOCUMENT

This isotope has a physical half-life of 45.8 days and emits both beta and gamma radiation according to the following decay scheme (1):



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It is commercially available from the radiopharmaceutical department of Squibb or Abbott Companies.

Administration of Hg²⁰³:

Hg²⁰³ will be administered intravenously. Each shipment is calibrated and the amount of isotope required will be removed. Suitable sterilization is done and the precautions appropriate to such procedures are followed;

It is anticipated that 100 µc of Hg²⁰³ will be administered intravenously to the average patient at any one time. There will be no repetitive doses, usually.

Radiation Dose from Hg²⁰³:

Four reports of radiation exposure following Hg²⁰³ scanning have been reported, (2-5). These data are outlined in Table 2.

(2)

(3)

(4)

(5)

The following calculations for total body radiation are based on a 70 kg. man, 160 cm. tall, receiving a dose of 100 µc Hg²⁰³. A biological half-life of 5.25 hours for the fast component, and 7 days for the slow component (according

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