The Medical Research Center

Brookhaven National Laboratory

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BROOKHAVEN NATIONAL LABORATORY

MEMORANDUM

DATE: January 23, 1951

REPOSITORY Records Holding Area Bldg 494

COLLECTION Protocols - Clinical

BOX No. 4

FOLDER Human Protocols 1950-1963

TO: BNL Committee on Use of Radioactive Isotopes in Human Subjects

FROM: James S. Robertson, M.D.

SUBJECT: Project H-7: Use of Na-24 as a therapeutic agent in humans

SCM-10

It is proposed that we use Sodium 24 as a therapeutic agent in humans. There are cases in which a malignant growth is bathed by a fluid, such as ascitic fluid, and it is expected that radiation can be delivered to the malignant tissues by injecting the radioactivity directly into the fluid space. This would be done only after tracer studies on the fluid space involved had been conducted to serve as a basis for estimating the radiation which would be delivered to other tissues via the circulation. Because of the short (14.9 hours) half-life of the Na-24, most of the radiation will be delivered to the space in which it is injected if the turnover rate of fluid in this space is sufficiently slow.

It is estimated that it will be desirable to give radiation doses of the order of up to 2000 r in such treatments. Depending upon the geometry involved, this will require doses of the order of 18 mc of Na-24 per liter of fluid.

Studies already conducted indicate that in the type of patients who will be used, the whole body irradiation will be about 5 per cent or less of that received by tissues in contact with ascitic fluid when Na-24 is injected intraperitoneally. The irradiation of blood-forming tissues will be kept below 100 r in a treatment with this method.

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Medical Department

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