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DEPARTMENT OF  
OBSTETRICS AND GYNECOLOGY

January 26, 1951.

Dr. L.W. Tuttle  
Division of Biology and Medicine  
United States Atomic Energy Committee  
1901 Constitution Avenue, N.W.  
Washington, D.C.

Dear Dr. Tuttle:

For the past six months, we have been engaged in a research project involving the use of radioisotopes in which, the A.E.C. we believe, would be interested. In this connection I have spoken with Mr. Cherry of the New York Operations Office and he suggested that I write to you, outlining our project, before submitting a formal proposal for a contract.

As Biochemist to the Dept. of Obstetrics and Gynecology, I am interested in the study of steroid hormone metabolism (sex and adrenal) and its relationship to various endocrinological problems including cancer of the female reproductive tract. An essential aspect of our work involves the study of the nature and quantity of steroids excreted in the urine and, possibly, the feces.

Since the usual procedures for achieving the analysis of steroid metabolites are complex and involve technical difficulties, we have attempted to simplify the method by applying a technique using radioisotopes. In principle, the method we are developing consists of labelling the urinary steroid extracts with radioiodine and then separating, by chromatographic analysis, the individual components of the steroid mixture. By following the radioactivity of the effluent from the chromatograms continuously we can take advantage of the unique properties of the radioelement so as to monitor the results and determine when the separation of each component has been effected. Simultaneously, we can obtain quantitative data about these substances. Moreover, the great sensitivity of the method makes it applicable to the estimation of microgram quantities of the metabolites. The identity of each

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steroid can be ascertained either by the usual chemical characterizations or by infrared spectral analysis. We propose to use this technique to examine the steroids excreted by women with uterine cancer and to compare this excretion with that of normal and pregnant women.

The nature of the technique is such that it will undoubtedly be applicable to analytical problems involving other classes of organic compounds and we believe this is another reason that it should be of considerable interest to the A.E.C.

Before submitting a formal statement I would appreciate very much hearing your thoughts on our project. If you require any further information I shall be happy to supply it and if you think it desirable I can arrange to come to Washington to discuss this with you in person.

Sincerely yours,

*Seymour Lieberman*  
SEYMOUR LIEBERMAN

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Assigned to  
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SL/jh

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