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Records Series Title	John Lawrence - Scientists' Papers
Accession No.	434-90A-011aB
File Code No.	12-14-12
Carton No.	(9)
Folder No.	A-2-C 1962
Notes	radio iodinated albumen
Found By	Karen Holmes
Dates	

**COPY**

applied to pregnant women

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UNIVERSITY OF CALIFORNIA

DONNER LABORATORY AND DONNER PAVILION  
BERKELEY 4, CALIFORNIA

*Lawrence*

June 20, 1962

*Note  
Dobson  
1/17/62*

**BEST COPY AVAILABLE**

H. D. Bruner, M.D.  
Assistant Director for  
Medical and Health Research  
Division of Biology and Medicine  
United States Atomic Energy Commission  
Washington 25, D.C.

Dear Dave:

Following our telephone conversation of June 12th, 1962, Ernest Dobson said he would have a quick try to get some preliminary data on the matter of radioiodine exposure of fetal tissue, when pregnant mice receive labeled iodinated albumen. I briefly summarize his results and append his preliminary data sheets (see attached sheet). Dr. Dobson will prepare a laboratory report, but that takes somewhat more time.

Two mice were given Abbott's iodinated albumen, and sacrificed nineteen hours afterward; one mouse was approximately at term, the other about at the 15th day of fetal development.

Mouse uptake of the labeled iodine is fairly widespread and in general the fraction distributed to the fetal mass is similar to the fractional mass of fetal tissues present compared to the maternal mass, except that the fetal mass acquires about one-half as much  $I^{131}$  as does the maternal mass.

Mass	weight	Radioiodine Content				RELATIVE I CONCENTRATION
		Ratio	Fetus mass	Maternal mass	Ratio	
Mouse 1	(estimated weight) 16 gms fetal tissue 27 gms maternal tissue	$\frac{1}{1.7}$	5%	22%	$\frac{1}{4.4}$	Fetal tissue $\frac{c}{l}$ maternal " "
Mouse 2	4 gms fetal tissue 34 gms maternal tissue	$\frac{1}{9}$	0.9%	24.6%	$\frac{1}{27.5}$	Fetal tissue $\frac{c}{l}$ maternal " "

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H. D. Bruner, M.D.,

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Fetal thyroid was not dissected free of the embryo but it appears that it could not have had a much higher fraction of the iodide entering the fetal circulation than the fraction observed to go to the maternal thyroid. (Head half had same content as caudal half of the embryo).

Considering the smaller mass of the embryos, and also the smaller size of their thyroids, probably the radioiodine concentration of fetal tissue (radioactivity per gram tissue) is about the same  $\pm 2x$  the maternal uptake.

Quite definitely much more could be done on this matter. For example the albumen source is human applied to mice. Mice albumen to mice would be more meaningful etc.

I hope this is of some help. Dobson did a fast and excellent job. John Lawrence will see you this week in Chicago.

Best regards,

*Hardin*  
Hardin Jones

HJ/bs P.S. Ernie Dobson is interest in helping you further with this problem and he would especially like to have information you may have on the doses commonly used when applying radio iodinated albumen to pregnant women. He will also write you separately. But if you have the information readily available please send it to him.

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