

Q5

DATE June 24, 1971

JOHN A. ZAPP, JR., DIRECTOR
M. W. KELL LABORATORY
EMPLOYEE RELATIONS DEPARTMENT

MEDICAL RESEARCH PROJECT MR-10-A-11 PART I

INVESTIGATION OF THE INHIBITION OF δ -AMINOLEVULINIC ACID DEHYDRASE BY LEAD

Authority is requested to undertake the investigation identified above and report as follows:

Measurement of the enzyme ALA dehydrase has been advocated as a means of detecting workers exposed to lead. It is believed by some investigators that inhibition of the enzyme ALA dehydrase is a test-tube phenomenon and not an accurate estimation of what is going on in the body. It is thought that when red blood cells containing the enzyme are lysed (broken) in the test tube that lead which is on the outside of the cell comes in contact with the enzyme and that this is the inhibition that is measured.

In order to test this hypothesis, blood from dogs with normal ALA dehydrase activity will be diluted with blood from dogs with severely depressed ALA dehydrase activity. If the inhibition is a true in vivo (body) effect the results obtained will be a straight line. On the other hand, if it is merely a test-tube effect the results will be curvilinear.

The first involved covers feeding dogs lead to depress their enzyme activity, biochemical analyses and analyses of the data. The oral section, biochemistry and physiology section will cooperate jointly in trying to solve this basic fundamental question.

and requested \$5,000.

Work to be started Immediately

thoroughly authorized

Request for study made by _____

dated 20 date

Mary E. Maxfield

...not to be charged

If this request meets with your approval, please enter the account to be charged. Have two copies authorized and return them to Haskell Laboratory, Dept. Section. The additional copies may be retained for your information and distribution.

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Proposed by ALEX AZAR, M. D.
Haskell Laboratory

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Authorized

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