DOCUMENT SOURCE
Lawrence Berkeley Laboratory
Archives and Records Office
Records Series Title Scientists' Papers: JOHN LAWRENCE
Accession No. 434-90-A0160
File Code No. 10-14-6
Carton No. 117
Folder No. 5-GENERAL
Notes
Found By Karen Holmes
Dates 1969
COPY

715701

JUSTIFICATION FOR VISIT WITH DR. ESPADA

Dr. Schooley and I first demonstrated the antigenicity of erythropoietin, and have already shown antibodies to erythropoietin to be a useful tool in elucidating some of the facts concerning the mechanisms involved in the physiological control of erythropoiesis.

One of the most promising possibilities of the value of antibody to erythropoietin will be derived from its application in the radioimmunoassay of this hormone. Such an assay, capable of measuring normal plasma erythropoietin concentration, will undoubtedly result in a turning point in our understanding of the factors controlling this important hormone, as has already been shown for other hormones, namely, growth hormone.

I have obtained from Dr. Joaquin Espada, Corrientes, Argentina, a small amount of stable highly purified human erythropoietin. This material is by far the most potent human erythropoietin yet produced, being in the neighborhood of 500-1000 times more purified than any other human erythropoietin preparation.

I have labeled this material with Iodine-125 and, after a series of immunological purification steps, have utilized it in the radioimmunoassay system with dilutions of human IRP standard erythropoietin competing with it for binding of antibody to erythropoietin. Using such a system, a curve is obtained with decreasing amounts of the labeled erythropoietin bound to antibody in the range between 5 and 50 milliunits of erythropoietin per ml. The results of this work have been most promising with plasma from normal individuals falling at the lower end of this range, and plasma from anemic individuals generally falling as expected at the upper end of such a curve. However, the results in the anemic individuals, where the erythropoietin level is high enough to be checked by bioassay, have not completely correlated with the radioimmunoassay results. I have been collaborating with Dr. Espada on the development of the radioimmunoassay for erythropoietin by long distance, and feel at this point that a more detailed knowledge of the subtleties of each biochemical step will be helpful to me.

Since Dr. Espada has very recently accomplished the purification of human erythropoietin, the details of his technique have not as yet been published, and indeed he is continuously improving upon his technique.

For these reasons, I feel that a personal meeting with Dr. Espada will most quickly result in a successful solution to the erythropoietin radioimmunoassay problem.

Joseph F. Garcia, Ph.D.

3006949

DOCUMENT SOURCE
Lawrence Berkeley Laboratory
Archives and Records Office
Records Series Title Scientists' Papers: JOHN LAWRENCE
Accession No. 434-90-A0168
File Code No. 19-14-6
Carton No. 17
Folder No. S-GENERAL
Notes
Found By Karen Holmes
Dates 1969
COPY

PRIVACY ACT MATERIAL REMOVED

I was born in Hayward, California on where I went to elementary and high school. In June of 1942 I began studying at the University of California and received the A.B. degree on June 1947, having spent three of the intervening years in military service with the United States Naval Reserve.

On June 1948 I received a M.A. degree in Physiology, and began working part time at the Donner Laboratory, Lawrence Radiation Laboratory, in 1949 while remaining a part time student studying for the Ph.D. degree.

In 1955 I completed the work for the Ph.D. degree in Physiology. My thesis was entitled: "Studies on Erythropoiesis as a Function of Age in the Normal Male Rat."

I remained at the Donner Laboratory until 1958 when I took a two-year U. S. Public Health postdoctoral fellowship with Professor G. W. Harris in London. In 1960 I returned to the Donner Laboratory and have been working on the red cell stimulating hormone, erythropoietin, as well as some of the anterior pituitary hormones.

My interest has been in the control of the production of these hormones, and for this, in their quantification in blood. For the past five years I have been utilizing the relatively new radioimmunoassay technique for the measurement of blood levels of growth hormone and, armed with the details of this technique and a prior background in erythropoietin research, I am presently vigorously pursuing the potentially revolutionary possibilities of the application of the radioimmunoassay technique to the measurement of blood levels of erythropoietin.

December 15, 1969 Joseph F. Garcia, Ph.D.

3006950