

19 May 72

From: SGFS/ Major Reynolds

Subject: Progress Report - Project 1-36 (71)  
"The Radioimmunoassay of Human Thyrotrophin (TSH)"

To: John J McPhaul, Jr., Col, USAF

The progress on this project has been satisfactory. In nine (9) months I have completed 70-80 % of the project. Several unexpected problems have occurred and these include the following:

1. Sensitivity to less than 1 uU./ml. is not possible with I 125 labelled hormone. Patients who have had undetectable levels of hormone will need to have their serum remeasured when the sensitivity is increased using I 131 tracer.

2. Thyrotoxic patients have unexpectedly normal levels of TSH and some of these are in the upper range of normal. We now believe they may have a binding protein for TSH, namely Anti TSH antibody, and so are readjusting the separation procedure to measure this interfering substance and obtain the actual TSH values.

Accomplishments in the last six months include measurement of TSH levels in over 500 patients. These values show that our mean normal value is 3.5 uU/ml. with a S.D. of less than 1 uU/ml.. As expected partial cross reactivity with HCG but no cross reactivity with bovine TSH has been demonstrated.

Details to be completed include:

1. Measure of low levels of TSH using I 131. These specimens include those from patients with Thyrotoxicosis.

2. Development of procedures to exclude TSH binding proteins from these assays.

There have been no resultant publications from this work as of this date.

James C Reynolds Major USAF MC

*James C Reynolds*