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Summary of Discussion

Dr. Donald F. Steiner expressed the hope that continued studies of amino acid sequences of insulins from other species might provide a clue to a presumed primordial gene which evolved eventually to code for insulin. Such an early gene might have had a product whose function was related to but not identical with insulin, e.g. a hydrolyase.

Dr. John N. Fain and *Dr. Keith L. Manchester* reopened the question of a unitary molecular mechanism of insulin action. A_1-acetyl insulin gives partial activity in isolated adipose tissue and full activity in the mouse convulsion test. Although such a finding tends to cast doubt on the unitary hypothesis, the result could also be explained by species or tissue specificity or by differing rates of de-acetylation. A more definitive test of the unitary hypothesis might involve measuring several different biological effects of an insulin derivative in a single tissue or cell type.

Dr. J. Schlichtkrull warned against literal interpretation of mouse convulsion data if the duration of action of the test sample is unknown.

Dr. E. F. Pfeiffer asked if anyone had determined the relative activity of proinsulin in human adipose tissue. Preliminary results in his own laboratory suggested greater activity than that normally found in rat adipose tissue.

Dr. Arthur Rubenstein commented about his cooperative studies with Dr. Yanaihara in which they studied a human proinsulin immunological system (human C-peptide, antisera to human C-peptide, and human synthetic peptides). The data thus far are in agreement with those of Dr. Chance, Dr. Root and Dr. Yanaihara using a porcine system; i.e. the 41-54 sequence in the connecting peptide appears to contain an important antigenic determinant.

—WILLIAM W. BROMER, Ph.D.