

ABSTRACT

Preliminary studies have shown that a crude annatto seed extract, exhibited both hypo- and hyperglycaemia. This present investigation sought to isolate the hypoglycaemic principle(s) present in this crude extract and to determine its activity in both normal and streptozotocin diabetic dogs.

The hypoglycaemic extract was isolated by a series of solvent/solvent extractions and by column chromatography. It was shown to contain six (6) components, by TLC, as compared to twelve (12) in the crude extract. Glucose tolerance tests, radioimmunoassay of insulin, glucagon and C-peptide were performed. Receptor studies on mononuclear leucocytes and erythrocytes were also done. The extract was fed to the dogs in the amounts of 80 mg/kg body weight and a residence time of one hour was allowed to elapse before GTTs were performed.

Consistent hypoglycaemia, increased insulin levels, decreased glucagon levels as well as delayed glucose absorption were shown. Increased insulin levels were not due to increased insulin synthesis. The effect was shown to be more pronounced in the normal condition than in the diabetic. Increased

binding of insulin to both white and red cells was shown while increased receptor affinity was demonstrated more in the red cells than in the white.

There is some indication that this extract has some similarities to sulphonylureas in terms of its mode of action. It is possible that this hypoglycaemic extract might be of pharmacological importance.