Research on Karawila - *In Vitro* Studies

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An aqueous extract from the unripe fruits of the tropical plant *Momordica charantia* was found to be a potent stimulator of insulin release from the β cell rich pancreatic islets isolated from obese hyperglycemic mice. The stimulation of insulin release was partially reversible. It differed from that of D glucose and other commonly employed insulin secretagogues in not being suppressed by L - epinephrine and in even being potentiated by the removal of Ca^{++} ions. This anomalous behaviour was not associated with general effects on the metabolism of the β cells as indicated by an unaltered oxidation of D glucose. Studies of ^{45}Ca fluxes suggest that the insulin releasing action is the result of berturbations of membrane functions. In support for the idea of direct effects on membrane lipids, the action of the extract was found to mimic that of a saponin in inhibiting the Ca^{++}/H_2^{+} ion exchange mediated by the ionophore A23187 in isolated Chromaffin granules and release Ca ions from preloaded liposomes.