

EVALUATION OF SELECTED MEDICINAL HERBS FOR ANTIDIABETIC ACTIVITY VIA ALPHA-GLUCOSIDASE INHIBITION

MICHAEL EZEBUENYI¹, AKEEM JIMOH², EVELYN AMBUSH³, ANTHONY NGUYEN⁴,
BRITTINI SUMMERS⁵, MICHELLE OZAH⁶, JOHN-CLIFFORD OBIH⁷ & PATIENCE OBIH⁸

^{1,2,3,4,5,6,8} College of Pharmacy, Xavier University of Louisiana, New Orleans, USA

⁷ Southern University at New Orleans, USA

ABSTRACT

Literature and native therapies have cited bitter melon, dandelion, blueberry, and roselle, as hypoglycemic agents, however, the exact mechanisms of action are unknown. It was hypothesized that, these agents could induce hypoglycemia, through the mechanism of α -glucosidase inhibition. The aim of the present study was, to examine inhibition of alpha-glucosidase as one of the possible mechanisms of action, of bitter melon (*Mormodicacharantia*), dandelion (*Taraxacumofficinale*), blueberry (*Vacciniumcorybosum*), and roselle (*Hibiscus sabdariffa*). Each of these agents has been used in the treatment of diabetes in, different parts of the world. The study was done *in vitro*, using α -glucosidase, obtained from Bacillus. The inhibitory effect of different concentrations of alcoholic extracts of the plants, on α -glucosidase was studied. The extracts of the plant showed inhibitory activities, against α -glucosidase, with IC50 values in a dose dependent manner. The result demonstrated that, bitter melon, roselle, dandelion, and blueberry share similar mechanism of action with Acarbose, which is being used as an antidiabetic agent.

KEYWORDS: Diabetes, Alpha-Glucosidase, Medicinal Plants, Mechanism of Action