



Evaluation of *in vitro* α - amylase inhibitory kinetics and free radical scavenging activities of *Momordicacharantia*

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Abstract:Diabetes is a metabolic disease that has become a serious problem of modern society due to the severe long-term health complications associated with it. Diabetes is also an oxidative stress related disorder and is emerging as a pandemic. One of the therapeutic approaches which involves decreasing hyperglycemia aims at inhibiting the enzyme alpha amylase. Potent inhibitors found in some vegetables, herbs and fruits have been known to be effective for control and prevention of diabetes. The aim of the present study was to investigate the *in vitro* α - amylase inhibitory kinetics and free radical scavenging activities of *Momordicacharantia*. Ethyl acetate extracts of *Momordicacharanti*seeds and *Momordicacharantia*flesh showed effective α - amylase inhibition of 94.2 % and 92.6 % respectively. Mechanism of inhibition and its kinetics studied by the method of Dixon Plot and Cornish- Bowden plot showed that the inhibition was found to be non competitive type by both the extracts. DPPH, Nitric oxide, Hydroxyl radical and Superoxide radical scavenging assays studied showed that ethyl acetate extracts of *Momordicacharantia* flesh and seeds have potent free radical scavenging capacity. The combined effect of α -amylase inhibitory and radical scavenging activity exhibited by *Momordicacharantia* shows promising scope in control and prevention of complications in diabetes.

Key words:*Momordicacharantia*, alpha-amylase inhibition, free radical scavengers.