

PHYTOCHEMICAL SCREENING AND IN-VITRO ANTIDIABETIC  
ACTIVITY ASSAY OF *Momordica charantia* L. var. *charantia*  
AND *Momordica charantia* L. var. *abbreviata* Ser.

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## ABSTRACT

### PHYTOCHEMICAL SCREENING AND *IN-VITRO* ANTIDIABETIC ACTIVITY ASSAY OF *Momordica charantia* L. var. *charantia* AND *Momordica charantia* L. var. *abbreviata* Ser.

*Momordica charantia* L. var. *charantia* (MCC) and *Momordica charantia* L. var. *abbreviata* Ser. (MCA) are commonly consumed as vegetables and have been used as a traditional remedy with antidiabetic activity. The study was carried out to identify phytochemical constituents and to determine antidiabetic properties of dried and fresh ethanolic extracts of MCC and MCA. The phytochemical compounds in plant were detected by using standard procedure where particular chemicals were used and colour changes were observed. The antidiabetic activity was determined through *in-vitro* enzyme inhibition assay. From this study, it was found that phytochemicals compounds of alkaloids, saponins, proteins, steroids and tannins were detected in both dried extract of MCC and MCA. The results have shown that alkaloids, saponins, proteins, terpenoids and flavonoids were detected in both fresh extract of MCC and MCA. The highest average percentage of inhibition at 640  $\mu\text{g/ml}$  was recorded in dried ethanolic extract of MCA where 55.26 % ( $\sigma = 0.19$ ) and 65.71 % ( $\sigma = 0.07$ ) for alpha amylase and alpha glucosidase respectively. The lowest average percentage of inhibition at 640  $\mu\text{g/ml}$  was recorded in fresh ethanolic extract of MCC in which 10.49 % ( $\sigma = 0.17$ ) and -4.26 % ( $\sigma = 0.00$ ) for alpha amylase and alpha glucosidase respectively. Overall study stated that dried ethanolic extract of MCA was the most effective to inhibit alpha amylase and alpha glucosidase followed by dried ethanolic extract of MCC, fresh ethanolic extract of MCA and fresh ethanolic extract of MCC. It is recommended to perform further study on animal models (*in-vivo*) in order to confirm the antidiabetic activity of MCC and MCA.