

## EXPLORING THE ROLE OF PHYTOCHEMICALS AND ANTIOXIDANTS ON ANTIHYPERGLYCEMIC POTENTIALS OF INDIAN MEDICINAL PLANTS

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### ABSTRACT

Various plants have antihyperglycemic potential, and the present study is emphasised to determine the role of phytochemicals and antioxidants against diabetes, as preventive health care management. The aim of this current research work was sought to analyse aqueous and methanolic extracts of *Momordica charantia*, *Trigonella foenum-graneum*, *Triticum aestivum*, *Solanum tuberosum* and *Nicotiana tobaccum*. The phytochemical screening of aqueous and methanolic extracts of test plants was done to check the presence of charantin, alkaloids, flavonoids, total phenols and tannins, through various *in vitro* assays. The antioxidant capability of extracts is to quench free radical, which was explored spectrophotometrically against reducing, power, nitric oxide, total carotenoids and superoxide anion. The study indicated a significant antioxidant activity and reasonable secondary metabolites, thus supporting its role as an antihyperglycemic component among traditional medicinal practices. Methanolic extracts of bitter melon and fenugreek have a higher amount of charantin (active principle as anti hypoglycemic agent) than its aqueous extract. Other phytochemicals and antioxidant activity were higher in aqueous extract than methanolic extract. The aqueous extract of test plants contained several bioactive phytochemicals that possessed medicinal properties, such as antioxidant activities and antihyperglycemic activities. The active ingredient, if subjected to further purification may further serve as an alternative drug of choice against hyperglycemia.

**KEYWORDS:** Plants Active Metabolites, Phytochemicals, Antioxidants, Antihyperglycemic Activities