Preliminary Studies on antioxidant and antidiabetic properties of *Cassia auriculata* flower extract: an *in vitro* approach

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ABSTRACT

Cassia auriculata Linn. a member of genus Cassia which belongs to family *Caesalpiniaceae.* Various parts of the plant have been reported to possess a wide array of pharmacological and beneficial properties. The flowers and seeds of the plant are used in the treatment of diabetes mellitus. In the present study, an attempt has been made to evaluate the antioxidant and antidiabetic potential of *Cassia auriculata* flower extract *in vitro*. Phytochemical analysis of the flower extract indicated the presence of alkaloids, flavonoids, proteins, carbohydrates, saponins, tannins, glycosides and phenols. The total phenolic and flavonoid content were found to be 262.31± 3.01 mg Gallic acid equivalent and 61.33 ± 3.05 mg quercetin equivalent respectively. The free radical scavenging activity of the flowers extract was determined against 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical, 2,2'-azino-bis(3- ethylbenzothiazoline-6-sulphonic acid) ABTS, radical Scavenging assays. At a concentration of 1000µg/ml, the leaves extract significantly scavenged 82.1 % of DPPH radicals and 83.50 % ABTS radicals. *C. auriculata* flower extract increases the uptake of glucose through the translocation of GLUT 4 in rat L6 myotubes. In Glucose uptake assay, *C. auriculata* flower extract showed 66.0 ± 1.79% glucose uptake over control compared with the standard insulin (1 IU/mL) which showed 92 ± 2.5% glucose uptake over control. In the presence of Wortmannin, a PI3 kinase inhibitor, the glucose uptake is reduced which evidence the fact *C. auriculata* flower extract may facilitates the translocation of GLUT4 via PI3 kinase mediated pathway.

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