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Bioactivity Guided Isolation of Antidiabetic Compounds from Common Weed *Mimosa pudica* L. Using Diabetic Enzyme Inhibitory Assay

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Diabetes mellitus is global threat which is inspiring numerous antidiabetic researches. Medicinal plants have been used to treat various ailments from time immemorial. The rapid utilization of medicinal flora puts stress and there comes a strong necessity to find and propose alternatives. In our quest for the search of alternative medicinal therapeutic sources we worked with *Mimosa pudica*, a common weed for antidiabetic implementation. *M. pudica* has been used traditionally against diabetes and its related complications. In this study the antidiabetic principles were isolated for the 1st time using bioactivity guided approach using α -amylase and α -glucosidase enzyme inhibitory assay. These enzymes are linked to the increase of post prandial blood sugar high. Column chromatography under various solvent systems was used to obtain fractions which were then combined according to similarity and based on enzyme inhibitory assay. The combined fractions were further processed to obtain 6 compounds (TZ 1- TZ 6). These compounds were tested for antidiabetic efficacy. Of the 6 compounds 4 were showing commendable antidiabetic activity. Spectral analysis showed the compounds TZ 3 to be Stigma sterol, TZ 4 to be Quercetin, TZ 5 to be a glycoside of Quercetin and TZ 6 to be another flavonoid compound undergoing further evaluation. The IC 50 value for the antidiabetic compounds were TZ 3 91.08 (± 1.54 , r^2 0.87), TZ 4 75.16 (± 0.92 , r^2 0.996), TZ 5 481.7 (± 0.703 , r^2 0.994), TZ 6 702.1 (± 1.46 , r^2 0.98). The study have successfully isolated major antidiabetic compounds that can be used for future drug implications.

Keywords: Bioactivity guided Isolation; α -amylase and α -glucosidase assay; Alternative medicinal source