

عنوان مقاله:

Aqueous extract of Tamarindus indica fruit pulp exhibits antihyperglycaemic activity

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خلاصه مقاله:

Objective: Tamarindus indica Linn.(T.indica) is a well-known plant used in traditional medicine. The plant is popular for its antidiabetic activity. However, effect so f its aqueous fruit pulp extract on carbohydrate hydrolyzing enzymes and its glucose uptake potential were not explored. Materials and Methods: The antidiabetic activity was assessed by in-vitro α -amylase and α -glucosidase inhibitory assays after preliminary phytochemical analysis. MTT assay was carried out to find cytotoxicity. Glucose uptake activity of the extract was carried out using L6 myotubes. Results: The results showed a strong α -amylase inhibitory activity for the fruit pulp extract of T.indica compared to standard acarbose; the IC50 of the fruit pulp extract of T.indica and acarbose was 34.19 μ g/ml 34.83 μ M. The extract also showed moderate α -glucosidase inhibitory activity. IC50 of the fruit pulp extract of T.indica and acarbose were 56.91 μ g/ml and 45.69 μ M respectively. The cytotoxicity assay showed IC50 of > 300 μ g/ml and \geq 1000 μ M for the fruit pulp extract of T.indica and metformin. The extract showed 63.99 \pm 0.08% glucose uptake in L6 myotubes whereas metformin and insulin at 10 μ g/ml and 10 μ M exhibited an uptake of 76.99 \pm 0.3% and 84.48 \pm 0.45% glucose, respectively. Conclusion: The study revealed that the fruit pulp extract of T.indica Linn does not show any cytotoxic effect and has very good α -amylase and good α -glucosidase inhibitory activities. The glucose uptake potential proves its postprandial .hypoglycemic effect. Hence, it may be considered an antidiabetic agent for control of postprandial hyperglycemia

کلمات کلیدی:

Tamarindus indica, Anti-diabetic, Cytotoxicity, glucose uptake

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