

Suchraum Medizin. Gesundheit. Externe Datenquellen

1. Treffer aus Suchraum Medizin. Gesundheit. >



Titel	Tocopherol from seeds of Cucurbita pepo against diabetes: validation by in vivo experiments supported by computational docking.
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Abstract	<p>Background/purpose: Tocopherol from raw pumpkin seeds has been reported to be effective in the alleviation of diabetes through its antioxidant activities. This study evaluates the antidiabetic activities of the tocopherol fraction of raw seeds of Cucurbita pepo L. (CPSE) in a diabetic rat model. In addition, the putative action mechanisms of its botanicals were computationally investigated.</p> <p>Methods: Seed water activity (Aw) was assessed. Tocopherol was extracted and quantified from raw seed oil. The effect of CPSE was studied in poloxamer-407 (PX-407)-induced type 2 diabetic Wistar rats. Glycemic, insulinemic, and lipid profiles, as well as lipid peroxidation status, were evaluated. Glucagon like peptide-1 (GLP-1) content in the cecum was evaluated and histopathological analysis of the pancreas was performed. Further, HYBRID and FRED docking were performed for 10 documented CPSE botanicals, for putative action mechanisms concerning three proteins [protein-tyrosine phosphatase 1B (PTP-1B), peroxisome proliferator-activated receptor gamma (PPAR-γ), and dipeptidyl peptidase IV (DPP-IV)] known to have diabetic therapeutic potential.</p> <p>Results: The Aw of raw seeds was found to be 0.544 ± 0.002. Using tocopherol standards, HPLC determination of CPSE revealed the presence of tocopherol isomers (α, β, γ, and δ). The tocopherol content was found to be 107.4 ± 2.9 mg/100 g of CPSE. When compared to diabetic control (DC) rats, the CPSE-treated diabetic rats presented a significant amelioration of glycemia, insulinemia, and lipid dysmetabolism. A remarkable reduction in oxidative markers and improved cecal and pancreatic characteristics were also observed.</p> <p>Tocopherol isomers have shown a considerable interaction potential with the aforesaid proteins in docking.</p> <p>Conclusion: The results provide pharmacological evidence of CPSE as an antihyperglycemic mediated by the interaction of various botanicals with multiple targets operating in diabetes mellitus (DM).</p>
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