

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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Quelle	Journal of the Formosan Medical Association = Taiwan yi zhi Abk.: J Formos Med Assoc
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 (A_w) 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 A_w 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>
Mesh-Begriff(e)	Animals ; Antioxidants/therapeutic use ; Blood Glucose/metabolism ; Cucurbita ; Diabetes Mellitus, Experimental/drug therapy ; Diabetes Mellitus, Experimental/metabolism ; Diabetes Mellitus, Type 2/drug therapy ; Diabetes Mellitus, Type 2/metabolism ; Male ; Models, Theoretical ; Oxidative Stress/drug effects ; Phytotherapy/methods ; Plant Preparations/therapeutic use ; Rats ; Rats, Wistar ; Seeds ; Tocopherols/therapeutic use ; Treatment Outcome
Chemische Substanzen	Antioxidants ; Blood Glucose ; Plant Preparations ; Tocopherols (1406-66-2)
Sprache	Englisch
Erscheinungsjahr	2013 Band 112, Heft 11, Seite(n) 676–690
Erscheinungsdatum	2013-11
Erscheinungsland	China (Republic : 1949-)
Dokumenttyp	Journal Article ; Research Support, Non-U.S. Gov't ; Validation Studies
ISSN	0929-6646
Signatur	ZB MED (Köln): Zs.B 1041

ZDB-ID	2096659-3
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Merkliste **MEDLINE**

zur Zeitschrift

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