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Title: Concomitant management of Type-II diabetes and its associated hyperlipidemia: role of ethyl 2-[5-(acetyloxy)pentyl] benzoate

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Abstract: Diabetes mellitus is a metabolic disorder prevailing throughout the world irrespective of age, sex and race. Moreover, complications associated with chronic diabetic conditions are severe and fatal. Normally, the patient exhibits cardiovascular disturbances, nephrological and neurological disorders.

Objective: The present study focuses on management of type-II diabetes and associated hyperlipidemia with the use of ethyl 2-[5-(acetyloxy)pentyl] benzoate isolated from *O. majorana* leaves.

Method: Streptozotocin, STZ (65 mg/Kg, i.p.) along with nicotinamide (120 mg/kg, i.p.) was used to induce type- II diabetes mellitus (NIDDM) in rats. Lipid profile was estimated after every 7 days for a period of 28 days. The rats were treated with various doses of ethyl 2-[5-(acetyloxy)pentyl] benzoate. The antidiabetic effect was compared with pioglitazone and antihyperlipidemic effect with Mevastatin.

Results: Ethyl 2-[5-(acetyloxy)pentyl] benzoate significantly lowered the FBG in vivo and also elevated glucose absorption in isolated rat hemidiaphragms. Our studies also revealed that the antihyperlipidemic property of ethyl 2-[5-(acetyloxy)pentyl] benzoate was comparable to Mevastatin. Furthermore, software assisted docking also proved the effective binding of ethyl 2-[5-(acetyloxy)pentyl] benzoate with PPAR- γ and HMG-coA reductase.

Conclusion: Ethyl 2-[5-(acetyloxy)pentyl] benzoate can serve as a better candidate in the concomitant management of diabetes and its associated complications such as hyperlipidemia due to its versatile nature.

Biography

Bhushan P Pimple has completed his PG from University of Pune. He is working as Head, Department of Pharmacognosy, in PES Modern College of Pharmacy, Nigdi, Pune 411044 from last 10 years. He has published more than 6 papers in reputed international journals and has been serving as an reviewer to six international journals

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