

عنوان مقاله:

Pterocarpus santalinus ameliorates streptozotocin-induced diabetes mellitus via anti-inflammatory pathways and enhancement of insulin function

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خلاصه مقاله:

Objective(s): Morbidity and mortality due to diabetes mellitus (DM) result in exorbitant psycho-economical costs, so there is a strong need to create new strategies and drugs for controlling DM. The aim of the current study was to investigate the anti-diabetic effect of the aqueous extract of Pterocarpus santalinus on streptozotocin (STZ)-induced DM as compared to glustin. Materials and Methods: Thirty male rats were divided into five groups of six rats each as follows: control; the second group, received the aqueous plant extract (250 mg/kg) orally and daily for three weeks; the third group, was intraperitoneally injected with a single dose of 65 mg/kg of STZ and sacrificed after four weeks; the fourth and fifth groups, were injected with STZ, then after one week these were treated orally with either plant extract or with 3 mg/kg of glustin for three weeks, then sacrificed. Results: HPLC analysis of the plant aqueous extract showed that it contains many polyphenols and flavonoids. Treatment with STZ resulted in significant reductions in body weight, insulin level, and the expression of Fetuin-A and IRS-1. It also caused significant elevations in glucose, HOMA-IR, glycated hemoglobin, urea, and the expression of JNK and SIRT-1. STZ also caused an extensive β-cell degranulation and decreased cellular density. The aqueous extract of red sandalwood was able to abrogate the deleterious effects caused by STZ and improved the histological architecture of pancreasConclusion: The aqueous extract of P. santalinus ameliorates diabetes mellitus via anti-inflammatory pathways and enhancement of insulin .function

کلمات کلیدی:

Fetuin A, IRS-1, JNK, Pterocarpus santalinus, Red sandalwood, SIRT-1

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