

小檗碱对白介素-6诱导胰岛素抵抗 3T3-L1脂肪细胞脂联素表达的影响

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中文摘要:目的: 观察小檗碱对白介素-6(IL-6)诱导胰岛素抵抗的3T3-L1脂肪细胞脂联素表达的影响。方法: 选用IL-6诱导3T3-L1脂肪细胞胰岛素抵抗(IR)模型。以 $20 \mu\text{g} \cdot \text{L}^{-1}$ IL-6培养48 h,将3T3-L1脂肪细胞随机分为正常对照组、模型组、吡格列酮组($50 \mu\text{mol} \cdot \text{L}^{-1}$)和小檗碱高、中、低剂量组($10, 20, 50 \mu\text{mol} \cdot \text{L}^{-1}$),以葡萄糖氧化酶法测定葡萄糖消耗量,观察小檗碱对脂肪细胞葡萄糖摄取的影响,鉴定IR模型;采用实时荧光定量PCR技术测定脂肪细胞脂联素基因mRNA水平。结果: 模型组葡萄糖消耗量及脂联素基因表达水平与正常对照组比较,均显著降低($P < 0.05$);小檗碱高、中、低剂量组及吡格列酮组均能显著增加葡萄糖消耗量及脂联素基因表达水平($P < 0.05$)。结论: 小檗碱可增加白介素-6诱导胰岛素抵抗的3T3-L1脂肪细胞脂联素基因mRNA的表达,改善胰岛素抵抗状态。

中文关键词: [小檗碱](#) [胰岛素抵抗](#) [白介素-6](#) [脂联素](#) [3T3-L1细胞](#)

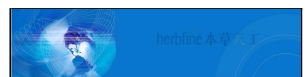
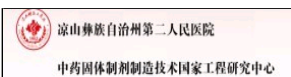
Effect of Berberine on Gene Expression of Adiponectin by IL-6 Induced Insulin Resistance in 3T3-L1 Adipocyte

Abstract: Objective: To explore the effect of berberine on adiponectin gene mRNA expression in 3T3-L1 adipocyte of insulin resistant induced by interleukin-6 (IL-6). Method: To build 3T3-L1 adipocyte model of insulin resistant induced by interleukin-6. 3T3-L1 adipocytes were exposed to $20 \mu\text{g} \cdot \text{L}^{-1}$ IL-6 for 48 h, the 3T3-L1 adipocytes with insulin resistant were divided into six groups randomly: normal control groups, model groups, pioglitazone ($50 \mu\text{mol} \cdot \text{L}^{-1}$), and low, middle, high doses of berberine groups ($10, 20, 50 \mu\text{mol} \cdot \text{L}^{-1}$), the amount of glucose consumption was measured by detecting the glucose content in cell culture supernatants with glucose oxidase assay, the effect of berberine on glucose uptake of 3T3-L1 adipocytes was observed, and cell model of insulin resistant was identified. mRNA expression of adiponectin gene was determined by real-time quantitative reverse-transcription polymerase chain reaction. Result: There was statistical difference between model group and normal control group in their amount of glucose consumption and gene expression of adiponectin, which was decreased markedly in model group ($P < 0.05$). Pioglitazone ($50 \mu\text{mol} \cdot \text{L}^{-1}$), and low, middle, high doses of berberine groups ($10, 20, 50 \mu\text{mol} \cdot \text{L}^{-1}$) markedly increased both amount of glucose consumption and gene expression of adiponectin. Conclusion: Berberine can increase mRNA expression of adiponectin gene and improve insulin resistant in 3T3-L1 adipocytes.

keywords: [berberine](#) [insulin resistance](#) [interleukin-6](#) [adiponectin](#) [3T3-L1 cells](#)

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