

论著

## 罗格列酮对高脂喂养大鼠肾小管上皮细胞SREBP-1、TGF-β1表达和细胞外基质沉积的影响

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**摘要** 目的: 探讨高脂饮食对大鼠肾小管上皮细胞固醇调节元件结合蛋白-1 (SREBP-1)、转化生长因子-β1 (TGF-β1) 表达和细胞外基质 (ECM) 沉积的影响以及罗格列酮的干预治疗。方法: 给予Wistar大鼠高脂饲料喂养并进行罗格列酮灌胃治疗3个月, 进行血液生化检测。油红O检测肾脏脂质沉积情况, Masson染色检测肾脏细胞外基质沉积, SREBP-1、TGF-β1和FN蛋白表达检测采用免疫组织化学和Western blotting, 原位杂交用于检测SREBP-1 mRNA的表达。结果: 罗格列酮有效避免了高脂饮食导致的大鼠血糖、血胰岛素和血甘油三酯的升高; 高脂喂养组大鼠肾脏小管上皮细胞内出现了明显脂滴, 小管外间质细胞外基质沉积增多, 罗格列酮干预减少了脂滴和基质沉积; SREBP-1蛋白和RNA在高脂喂养组均呈高表达, 明显强于正常对照组, 经罗格列酮处理表达有显著下降, 蛋白前体和成熟片段分别下降了27.39%和27.32%; 致纤维化因子TGF-β1和细胞外基质成分之一的纤维黏连蛋白 (FN) 在高脂喂养大鼠肾脏的高表达均被罗格列酮干预治疗所避免, TGF-β1表达在罗格列酮干预组较高脂组降低了19.14%。结论: 罗格列酮可有效避免高脂饮食造成的大鼠肾小管上皮细胞SREBP-1、TGF-β1高表达、脂质沉积和细胞外基质堆积。

**关键词** [罗格列酮](#) [高脂饮食](#) [固醇调节元件结合蛋白质1](#) [转化生长因子β](#) [细胞外基质](#)

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## Effect of rosiglitazone on SREBP-1 and TGF-β1 expressions and accumulation of ECM in renal tubular cells of Wistar rats treated with high fat diet

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### Abstract

<FONT face=Verdana>AIM: To study the effect of high fat diet on the expression of sterol regulatory element binding protein-1 (SREBP-1) and transforming growth factor β1 (TGF-β1) in renal tubular cells and rosiglitazone intervention. METHODS: Wistar rats were treated with high fat diet and rosiglitazone for 3 months. The serum glucose, serum insulin and serum triglyceride were detected. Oil Red O staining was used to observe the renal lipid deposit and Masson staining was for the detection of ECM accumulation. SREBP-1, TGF-β1 and FN protein were determined by the methods of immunohistochemistry and Western blotting. SREBP-1 mRNA was detected by in situ hybridization. RESULTS: Rosiglitazone prevented effectively the increase in serum glucose, serum insulin and serum triglyceride resulted from high fat diet. High fat diet led to lipid droplet formation in renal tubular cells and interstitial ECM accumulation, which was decreased by rosiglitazone treatment. Compared to normal rats, SREBP-1 protein and SREBP-1 mRNA showed high expressions in high fat diet rats that were lowered by rosiglitazone. The precursor segment and mature segment of SREBP-1 protein were decreased by 27.39% and 27.32%. Similarly, the high expressions of TGF-β1 and FN protein in kidney of high fat diet rats were also prevented by rosiglitazone intervention. Compared to high fat diet rats, the expression of TGF-β1 in rosiglitazone treatment rats was lowered by 19.14%. CONCLUSION: Rosiglitazone prevents effectively the over-expression of SREBP-1 and TGF-β1 in renal tubular

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cells, and decreases lipid accumulation and ECM production in rats fed with high fat diet.</FONT>

**Key words** [Rosiglitazone](#) [High fat diet](#) [Sterol regulatory element binding protein-1](#) [Transforming growth factor beta](#) [Extracellular matrix](#)

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