

论著

## 桑枝多糖对糖尿病模型小鼠的降血糖作用

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**摘要** 目的 研究桑枝多糖对糖尿病小鼠的降血糖作用,并探讨其作用机制。方法 采用ip给予链脲佐菌素结合饲喂高能高脂饲料的方法,制备糖尿病小鼠模型。糖尿病模型小鼠ig给予桑枝多糖200, 400和600 mg·kg<sup>-1</sup>,每天1次,连续4周。葡萄糖氧化酶法测定血糖水平,分光光度法测定血清超氧化物歧化酶(SOD)活性和丙二醛(MDA)含量,比色法测定肝糖原水平,甘油磷酸氧化酶法测定血清甘油三酯(TG)水平,酶法测定血清总胆固醇(TCH)水平,ELISA法测定血清胰岛素水平。结果 桑枝多糖能显著降低糖尿病模型小鼠血糖浓度,与给药前相比,给药4周后桑枝多糖400和600 mg·kg<sup>-1</sup>组血糖浓度分别下降了33.3%和29.9%(*P*<0.05);与模型组相比,桑枝多糖400和600 mg·kg<sup>-1</sup>组分别下降了40.4%和38.8%(*P*<0.01),200 mg·kg<sup>-1</sup>组下降了34.6%(*P*<0.05)。与模型组相比,桑枝多糖可显著升高血清SOD活性(*P*<0.01),降低血清TG含量(*P*<0.01),降低血清TCH和MDA含量(*P*<0.05,*P*<0.01),增加肝糖原存储量(*P*<0.05);桑枝多糖能显著提高血清胰岛素水平和机体胰岛素敏感性(*P*<0.01,*P*<0.05)。结论 桑枝多糖对糖尿病模型小鼠具有降血糖作用,其作用机制可能与其增强机体清除自由基和抗脂质过氧化能力、调节脂类物质代谢、增加肝糖原存储量、改善机体的胰岛素分泌及对胰岛素的增敏性等有关。

**关键词** [多糖](#) [桑枝](#) [糖尿病](#) [模型](#), [动物](#) [血糖](#)

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## Hypoglycemic effect of polysaccharides in Ramulus Mori on diabetic model mice

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### Abstract

**OBJECTIVE** To investigate the hypoglycemic effect and mechanism of polysaccharides in Ramulus Mori (PRM) on diabetes model mouse. **METHODS** The mice were ip given streptozotocin 100 mg·kg<sup>-1</sup> combined with high fat diet to prepare the diabetic mouse model. The diabetic mice were ig given PRM 200, 400 and 600 mg·kg<sup>-1</sup> once daily for 4 weeks. Blood-glucose level was measured by glucose oxidase method, serum superoxide dismutase (SOD) activity and malondialdehyde (MDA) content were detected with spectrophotometric method. The hepatic glycogen, serum triglycerides (TG), serum total cholesterols (TCH) and serum insulin level were measured with colorimetric method, glycerophosphoric acid oxidase method, enzymatic-trinder method and ELISA, respectively. **RESULTS** The blood-glucose level of the diabetic mice were decreased 33.3% and 29.9% (*P*<0.05) in PRM 400 and 600 mg·kg<sup>-1</sup> groups compared with that before giving PRM. Compared with that of model group, PRM 200, 400 and 600 mg·kg<sup>-1</sup> decreased 34.6% (*P*<0.05), 40.4% and 38.8% (*P*<0.01). PRM could also significantly decrease the content of MDA, TG and TCH(*P*<0.05), and significantly increase the SOD activity(*P*<0.01), hepatic glycogen content(*P*<0.05), serum insulin level and insulin sensitivity (*P*<0.05). **CONCLUSION** PRM has hypoglycemic effect on diabetic mice. This action may be related with its scavenging harmful free radicals, inhibiting lipid peroxidation, regulating lipids metabolism,

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