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论文

蓝莓对免疫性肝纤维化大鼠HGF表达影响

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摘要:

目的 观察蓝莓对免疫性肝纤维化大鼠肝细胞生长因子(HGF)、基质金属蛋白酶-9(MMP-9)以及基质金属蛋白酶组织抑制剂-2(TIMP-2)表达的影响.方法 60只健康清洁级Wistar大鼠随机分为对照组、模型组、蓝莓低、中、高剂量组、鳖甲软肝片组,除对照组外,其余各组大鼠腹腔注射猪血清制备大鼠肝纤维化模型,各蓝莓组在造模同时分别给予不同浓度蓝莓原浆,鳖甲软肝片组用复方鳖甲软肝片灌胃,1次/d,共12周;采用实时荧光定量RT－PCR和免疫组织化学法检测大鼠肝组织HGF、MMP-9以及TIMP-2 mRNA及蛋白表达.结果 与对照组比较,肝纤维化模型组HGF、MMP-9、TIMP-2的mRNA水平及蛋白表达升高;与模型组比较,中、高剂量蓝莓组HGF mRNA及蛋白表达[(634.9±61.2)、(637.7±68.2)和(31.8±3.0)、(31.2±4.3)]与MMP-9 mRNA及蛋白表达[(359.1±29.5)、(361.4±27.1)和(39.4±4.0)、(38.5±3.7)]明显升高,TIMP-2 mRNA及蛋白表达[(426.0±16.7)、(431.3±33.0)和(41.6±6.2)、(37.3±4.3)]明显降低,差异均有统计学意义(P<0.05).结论 蓝莓对大鼠免疫性肝纤维化有一定预防作用,其机制可能与上调HGF、MMP-9,下调TIMP-2表达有关.

关键词: 肝纤维化 肝细胞生长因子(HGF) 基质金属蛋白酶-9(MMP-9) 基质金属蛋白酶组织抑制剂-2(TIMP-2) 蓝莓

Effect of blueberry on HGF expression in rats with hepatic fibrosis

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Abstract:

Objective To investigate the effects of blueberry on the prevention of liver fibrosis in rats and the influences of blueberry on hepatocyte growth factor(HGF),matrix metallopeptidase-9(MMP-9),and tissue inhibitor of metalloproteinase-2(TIMP-2)in liver tissues of the rats.Methods Sixty Wistar rats were divided into 6 groups(saline control group,model group,low,moderate,and high dose blueberry group,and Fuang Bie-Jia-Ruan-Gan tablet group).The hepatic fibrosis model of rat was established by intraperitoneal injection of porcine serum once daily for 12 weeks.The rats in blueberry treatment groups and Fu-Fang-Bie-Jia-Ruan-Gan tablet group were perfused with blueberry juice or FuFang-Bie-Jia-Ruan-Gan tablet for 12 weeks and the saline control group was treated with saline alone.All rats were sacrificed at the end of the treatments.Pathologic changes of hepatic tissue were evaluated with hematoxylin-eosin(HE)staining.Expressions of HGF,MMP-9,and TIMP-2 mRNA were detected with real-time fluorescent quantitative reverse transcriptise-PCR,and the expressions of HGF,MMP-9,and TIMP-2 protein in the liver tissue were detected by immunohistochemical assay.Results Compared with physiological saline control group,the mRNA and protein expressions of HGF,MMP-9,and TIMP-2 were significantly higher(P < 0.05 for all)in model group.The rats in moderate and high dose blueberry treatment groups showed significantly increased levels of HGF mRNA(634.9±61.2,637.7±68.2),HGF protein(31.8±3.0,31.2±4.3),MMP-9 mRNA(359.1±29.5,361.4±27.1),MMP-9 protein(39.4±4.0,38.5±3.7)and decreased levels of TIMP-2 mRNA(426.0±16.7,431.3±33.0),TIMP-protein(41.6±6.2,37.3±4.3),respectively,compared to those of model group.Conclusion Blueberry has preventive effect on porcine serum-induced liver fibrosis in rats.The mechanism may be associated with the up-regulated expressions of HGF and MMP-9 and down-regulated expression of TIMP-2.

Keywords: liver fibrosis HGF MMP-9 TIMP-2 blueberry

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