药学学报 1997, 32(12) 881-887 DOI: ISSN: CN:

论文

牛膝多糖的免疫调节作用

李宗锴;李电东

中国医学科学院,中国协和医科大学医药生物技术研究所,北京100050

摘要:

为深入探讨牛膝多糖(ABPS)对免疫系统的作用机制,用体内、外的方法,对老年鼠一些免疫功能进行了研究。研究表明,ABPS在体外可以提高老年小鼠T淋巴细胞的增殖能力和IL-2的分泌。体内能显著提高老年大鼠T淋巴细胞和血清中TNF-β或TNF-α及NO的产生和NOS的活性,降低其sIL-2R的产生;ABPS50～800mg·L^{-1}体外给药或100mg·kg^{-1}ip可提高老年大鼠PMΦTNF-α及NO的产生和NOS的活性,ABPS100mg·kg^{-1}ip并能提高LPS诱导的PMΦTNF-α及NO的产生和NOS的活性。ABPS对老年大鼠大脑皮层NO的产生及NOS的活性无影响。提示ABPS可以启动和活化MΦ,纠正老年鼠的免疫低下状态,是免疫调节剂。

关键词: 牛膝多糖 一氧化氮 白细胞介素2 肿瘤坏死因子 免疫调节作用

THE IMMUNOMODULATORY EFFECT OF *ACHYRANTHES BIDENTATA* POLYSACCHARIDES

ZK Li and DD Li

Abstract:

Achyranthes bidentata polysaccharides(ABPS) was extracted from the root of *Achyranthes bidentata* Blume with molecular weight of 1400. It composed of fructose and glucose residues. The molar ratio was 8.7∶1.0. It was a water soluble neutral polysaccharide of white powder in purity of 99.9%. The effect of ABPS 0.625×10^{2}～2.00×10^{3} mg·L^{-1} on lymphocyte proliferation to Con A on splenocytes from aged mice was evaluated to be about 1.11～3.26 folds *in vitro*. ABPS 1.00×10^{3} mg·L^{-1} was shown to increase IL-2 production in Con A-stimulated aged mouse splenocytes from 6.7±1.0 u·ml^{-1} to 19.3±5.7 u·ml^{-1} *in vitro*. Sandwish-ELISA was used for the determination of TNF-α, TNF-β and sIL-2R in cell suspension. The spectrophotometry with Griess reagent was used for the determination of NO in cell suspension. A method was developed for the determination of NOS activity in biological sample by HPLC. ABPS 50, 100 mg·kg^{-1} ip was found to markedly promote TNF-β and NO release, but decrease sIL-2R production from Con A-stimulated aged rat splenocytes, the activity of NOS in those cells was increased. ABPS 100 mg·kg^{-1} ip elevated serum TNF-α and NO contents and the NOS activity induced by LPS 0.3 mg·kg^{-1} ip in aged rats. ABPS 50～800 mg·L^{-1} elevated TNF-α and NO production from PMΦ and increased the NOS activity in PMΦ *in vitro*, but showed no significant influence on TNF-α, NO release and on NOS activity induced by LPS 10 mg·L^{-1} for PMΦ from aged rats. ABPS 100 mg·kg^{-1} ip elicited TNF-α, NO production and NOS activity for PMΦ from aged rats, ABPS 100 mg·kg^{-1} ip showed a synergetic action with LPS 10 mg·L^{-1}. When rats were treated with ABPS 50～800 mg·L^{-1} ip, there was no significant difference on NO productionon, and NOS activity in the cerebral cortex between those isolated from aged rats and those isolated from young rats. These results indicate that ABPS may prime and trigger MΦ and has restorative effects on the deficiency of the immune system associated with aging in mice and rats.

Keywords: Nitric oxide Interleukin 2 Tumor necrosis factor Immunomodulatory effect *Achyranthes bidentata* polysaccharides(ABPS)

收稿日期 1997-01-23 修回日期 网络版发布日期

DOI:

基金项目:

通讯作者: 李电东

作者简介:

参考文献:

本刊中的类似文章

1．田庚元;李寿桐;宋麦丽;郑民实;李文.牛膝多糖硫酸酯的合成及其抗病毒活性[J]. 药学学报, 1995,30(2): 107-111

2．方积年;张志花;刘柏年.牛膝多糖的化学研究[J]. 药学学报, 1990,25(7): 526-529

文章评论 (请注意:本站实行文责自负, 请不要发表与学术无关的内容!评论内容不代表本站观点.)

反馈人		邮箱地址	
反馈标题		验证码	3250