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论文

地鳖纤溶活性蛋白(EFP)的分离纯化、红外光谱分析及抑制鸡胚尿囊膜(CAM)血管生成研究

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摘要:

以传统中药材地鳖为原料, 采用匀浆、盐析、硫酸铵分段沉淀、透析和DEAE-52纤维素离子层析等纯化方法, 从其体内分离纯化得到一种纤溶活性蛋白(Fibrinolyric protein of *Eupolyphaga sinensis* Walker, EFP), 采用SDS-PAGE电泳法对该蛋白进行了分子量和纯度测定, 结果表明, 从地鳖中提取纯化的EFP为相对分子量为41300的单一成分, 具有明显的纤溶活性, 由蛋白质和糖的红外光谱特征吸收峰可推断EFP为一种糖蛋白. EFP对鸡胚尿囊膜新生血管生成有良好的抑制作用, 比阳性对照组(地塞米松组)对鸡胚生长发育影响要小. 地鳖虫纤溶活性蛋白组分具有抑制血管生成的作用, 有可能用于肿瘤治疗.

关键词: 地鳖纤溶活性蛋白; 血管生成; 红外光谱

Studies on the Purification, Infrared Spectroscopic Analysis and Antiangiogenesis Effects of Fibrinolyric Protein(EFP) from *Eupolyphage sinesis* Walker

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Abstract:

A novel of fibrinolytic protein(EFP) was separated and purified by homogenate, salting-out, ammonium sulfate fractionation, DEAE-52 cellulose column chromatography from fresh tradional chinese medicine *Eupolyphaga sinensis* Walker. The molecular weight and purity of EFP were detected by sulfate-polyacry-lamide gel electrophoresis analysis. Thin polyacrylamide fibrin plate assay was used to test the fibrinolysin activity of EFP. The key functional group of EFP was analyzed by infrared spectroscopy. Chicken embryo chorioallantoic membrane(CAM) assay was used to test the inhibited effects of EFP on neovascularization *in vivo*. The results show that the molecular weight of fibrinolyric proteins from *Eupolyphaga sinensis* is approximately 41300 on sodium dodecyl sulfate-polyacrylamide gel electrophoresis analysis, the infrared spectra of the tablets showed characteristic of protein and glycoprotein. The vascular network of CAM of chicken embryo is inhibited by EFP. The results indicate that EFP possesses anti-angiogenic activity and may be useful for the development of novel anti-cancer therapy.

Keywords: Fibrinolyric protein of *Eupolyphaga sinensis* Walker(EFP); Angiogenesis; Infrared spectroscopy

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