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黄芪药材利尿作用的谱效关系研究

Spectrum-effect Relationship in Diuretic Effect of Astragali Radix

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作者	单位	E-mail
刘小花	甘肃省中药药理与毒理学重点实验室, 兰州 730000 ; 兰州大学药学院, 兰州 730000	liuxiaoh@Lzu.cn
蔺兴遥	甘肃省中药药理与毒理学重点实验室, 兰州 730000	
梁瑾	兰州大学药学院, 兰州 730000	
陈亚丽	兰州大学药学院, 兰州 730000	
任远*	甘肃省中药药理与毒理学重点实验室, 兰州 730000	ry@gszy.edu.cn
封士兰	兰州大学药学院, 兰州 730000	

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中文摘要:

目的 阐述黄芪的高效液相色谱(HPLC)图谱与利尿药效的相关性, 表征黄芪药材的药效物质基础。方法 对不同产地的10批黄芪药材乙酸乙酯部位进行HPLC指纹图谱研究; 以小鼠的排尿量为指标来研究利尿作用: 氢氯噻嗪(0.6 g·kg⁻¹)为阳性对照组, 小鼠灌胃乙酸乙酯部位的浸膏7 d(1.4 g·kg⁻¹); 采用灰关联度分析方法研究其谱效关系。结果 黄芪乙酸乙酯部位的利尿作用是其所有化学成分共同作用的结果, 各特征峰代表各自化学成分, 其对利尿作用贡献的大小顺序(按特征峰编号): P₇>P₆>P₈>P₅>P₄>P₂>P₁>P₃。其中4号峰为毛蕊异黄酮, 7号峰为芒柄花素。结论 乙酸乙酯部分含较多中等极性的黄酮类化合物, 能明显提高小鼠的排尿量, 其HPLC指纹图谱与利尿作用之间有一定对应关系, 这为进一步探讨黄芪对肾炎蛋白尿的治疗作用奠定了基础。

英文摘要:

OBJECTIVE To elaborate the correlation between chromatography fingerprint of Astragali Radix and the efficacy of diuretic effect, and express the effective substances foundation. METHODS To study different origin Astragali Radix of HPLC fingerprints of the ethyl acetate extracts of 10 batches, and the ethyl acetate extract was given to mice by gavage for 7 d (1.4 g·kg⁻¹). Hydrochlorothiazide was used as a positive control, Urine volume was set as the index of diuretic effect evaluation. Then the grey relational analysis was used to study its spectrum-effect relationship. RESULTS The efficacy of diuretic of the total ethyl acetate extract part of Astragali Radix resulted in its chemical compositions together. Its various peaks represented different chemical components. The contribution order of diuretic effect was(number of peaks): P₇>P₆>P₈>P₅>P₄>P₂>P₁>P₃, in which the number of peaks of 4 was identified as calycosin, peak of 7 was formononetin. CONCLUSION There are many flavonoids with middle polarity in the ethyl acetate extract, which might obviously increase the urine volume of mice. There is a responsible relationship between the HPLC fingerprints and efficacy of diuretic effect. It is also the foundation for further study to nephritis proteinuria.

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