

论文

黄芪特征组分的表征与识别

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摘要:

目的 研究表征黄芪中特征组分的新方法并进行识别,用于黄芪的质量控制。方法 反相液相色谱/二极管阵列检测器,分别分离黄芪脂溶性和水溶性组分;与自编紫外光谱库管理软件结合,多指标、快速识别黄芪的多组分。结果 探讨了分离黄芪水溶性与脂溶性组分的统一条件,用特征指标表征黄芪共同特征组分;确定了定量及指纹识别的几个关键技术。分别分析了黄芪对照品药材之间、不同产地黄芪之间的这些组分,有一致性、相似性和差异性。结论 结果代表性强,有良好的重现性,不用化学对照品,快速方便

关键词: 黄芪 液相色谱/二极管阵列检测器 特征组分 表征 识别

CHARACTERIZATION AND RECOGNITION KEY COMPONENTS IN ASTRAGALUS MEMBRANACEUS

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Abstract:

AIM To separate, identify and quantify multi components in complex traditional Chinese medicine (TCM) *Astragalus membranaceus* by unified analysis for systematic study of its relative contents. METHODS The analytical method was reverse phase HPLC/photodiode array detector. Based on the comparison of UV spectra, software of UV database to assist recognition has been established. Key components have been found and recognized in two reference *Astragalus membranaceus* and three samples from different sources. With the unified analytical project, relative peak heights of key components were recognized and contrasted. RESULTS The water soluble components can be separated by solvent system A, a gradient program with mobile phase of methanol water. The liposoluble components can be separated with the solvent system B, a gradient program of mobile phase of 2-propanol-acetonitrile-water. UV detection wavelength was set at 202 nm and the flow rate was 1 mL·min<sup>-1</sup> on a Hypersil ODS column. Twenty nine components in the four *Astragalus membranaceus* were recognized using characteristic parameters of chromatography and UV spectroscopy. All of the 29 key components in two reference samples and three samples from different sources were shown in their chromatograms to be the same. The concentrations of some the key components in different samples were similar while those of the others were different. The chromatographic peaks of the reference *Astragalus membranaceus* and two samples were matched with each other. Many different fingerprints were found and differences were shown on their chromatograms. Not only there were differences among three samples from different source, but also there were differences in the two reference samples. CONCLUSION To find out the key components and recognize them are the basis of quantitative recognition and are very useful when standards are not available. The method of multi component quantitative recognition in *Astragalus membranaceus* was developed. The method is convenient and reproducible. It can be widely used for the quality control of the *Astragalus membranaceus* .

Keywords: reverse phase HPLC / photodiode array detector key components characterization of chromatographic peak recognition of chromatographic peak *Astragalus membranaceus*

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