论文

核磁共振氢谱鉴别植物中药的研究

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摘要：

目的：建立核磁共振氢谱法鉴别植物中药的理论和方法。方法：选择适当的提取分离工艺，制备植物中药的特征总提物，在NMR波谱仪上测定中药的1HNMR指纹图；对特征总提物进一步分离，得到单体化合物后，通过结构鉴定和NMR研究，以对指纹图中的各特征谱线进行归属。结果：所研究的各种植物中药的1HNMR指纹图均有高度的特征性和重现性，同一品种不同产地的样品的[1]HNMR指纹图有很好的一致性；人参、天麻、黄连等多数植物中药特征总提物的[1]HNMR指纹图主要显示了其活性成分的特征共振峰，人参的[1]HNMR指纹图在δ 0.87～1.64区及δ 4.16～5.12区的共振信号能准确地反映人参皂苷的存在，天麻在δ 6.60～7.35区显示出其活性成分天麻苷和对-羟基苯甲醇的存在，而黄连的1HNMR指纹图主要为原小檗碱型生物碱的贡献。结论：用本文试验方法测定的多数植物中药特征总提物的[1]HNMR指纹图及其数据是这些中药的特征共振信号和数据，可作为鉴别植物中药的参照及其相对标准图谱。

关键词： 1HNMR指纹图；植物中药

STUDIES ON THE IDENTIFICATION OF TRADITIONAL CHINESE HERBAL MEDICINES BY ^{1}HNMR

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Abstract:

AIM: To establish the theory and method for the identification of Traditional Chinese Herbal Medicines (TCHMs) by ^{1}HNMR. METHODS: Most of the Traditional Chinese Medicines are of botanical origin and each of them has characteristic chemical constituents. The general extract which contains these characteristic and relatively regular herbal constituents can be obtained by a suitable extraction and separation procedure, and was named the characteristic general extract of the TCHM. The ^{1}HNMR finger-prints of these extracts were obtained on the NMR spectrometer. On basis of studies of the chemical constituents and structures of these characteristic general extract, the characteristic signals in these ^{1}HNMR fingerprints can be assigned. RESULTS: The ^{1}HNMR finger-prints of every kind of these TCHMs has highly characteristic features and reproducibility. The finger-prints of the same kind of TCHMs distributed in different areas are highly identicle. The finger-prints of the characteristic general extracts from many TCHMs such as *Panax ginseng*, *Gastrodia elata* and *Coptis chinensis*, etc. have shown characteristic signals of their active constituents. The signals from δ 0.87～1.64 and δ 4.16～5.12 on the finger-prints of *Panax ginseng* show clearly the existence of Ginsenosides, and the signals from δ 6.60～7.35 on the finger-print of *Gastrodia elata* show clearly the existence of Gastrodin and p-Hydroxybenzyl alcohol. The similar situation the active compounds can be shown clearly can be found on the ^{1}HNMR finger-prints of *Coptis chinensis*, etc. CONCLUSION: The ^{1}HNMR characteristic signals and data of most TCHMs obtained by the method of this paper can be regarded as references and relative standard spectra in the identification of TCHMs.

Keywords: traditional chinese herbal medicines   ^{1}HNMR finger-print

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