不同产地新疆沙旋覆花药材的质量控制研究Δ

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摘 要 目的 控制不同产地新疆沙旋覆花药材的质量。**方法** 采用常规形态学、显微观察对药材进行性状鉴别及显微鉴别；采用薄层色谱法鉴别药材中的绿原酸；参照2025年版《中国药典》（四部）通则检测药材中水分、总灰分、酸不溶性灰分及浸出物含量；采用高效液相色谱法测定绿原酸、异槲皮苷、槲皮素含量。以水分、总灰分、酸不溶性灰分、浸出物及绿原酸、异槲皮苷、槲皮素含量为评价指标，采用熵权-逼近理想解排序（TOPSIS）法综合评价18批药材的质量。**结果** 新疆沙旋覆花性状、显微特征明显，绿原酸的薄层色谱鉴别结果清晰；水分含量为6.20%～7.23%，总灰分含量为12.27%～15.80%，酸不溶性灰分含量为1.89%～2.57%，浸出物含量为21.24%～28.09%；绿原酸、异槲皮苷和槲皮素的含量分别为0.198 5～2.335 0、0.014 5～0.402 8、0.016 5～0.578 7 mg/g。18批样品的综合贴近度为0.106～0.673。**结论** 所建质量控制方法稳定、可靠，可用于控制新疆沙旋覆花的质量；不同产地药材质量存在明显差异。

关键词 新疆沙旋覆花；薄层色谱鉴别；显微鉴别；含量测定；熵权-TOPSIS法

Study on quality control of *Inula salsoloides* from different producing areas in Xinjiang

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ABSTRACT OBJECTIVE To control the quality of *Inula salsoloides* from different producing areas in Xinjiang. **METHODS** The macroscopic and microscopic identification of medicinal materials was performed using conventional morphological and microscopic observation methods. Thin-layer chromatography (TLC) was applied for the qualitative identification of chlorogenic acid in the medicinal materials. In accordance with the General Principles in Volume Ⅳ of the 2025 edition of the *Chinese Pharmacopoeia*, the contents of water, total ash, acid-insoluble ash, and extractives of the samples were determined. High-performance liquid chromatography was used to measure the contents of chlorogenic acid, isoquercitrin, and quercetin. Taking water, total ash, acid-insoluble ash, extractives, and the contents of chlorogenic acid, isoquercitrin, and quercetin as evaluation indices, the entropy weight-TOPSIS method was adopted to comprehensively evaluate the quality of 18 batches of samples. **RESULTS** *I. salsoloides* from Xinjiang exhibited distinct macroscopic and microscopic characteristics, and the qualitative TLC identification results for chlorogenic acid were clear and reliable. The water content ranged from 6.20% to 7.23%, the total ash content from 12.27% to 15.80%, the acid-insoluble ash content from 1.89% to 2.57%, and the extractive contents from 21.24% to 28.09%. The contents of chlorogenic acid, isoquercitrin, and quercetin were 0.198 5 to 2.335 0 mg/g, 0.014 5 to 0.402 8 mg/g, and 0.016 5 to 0.578 7 mg/g, respectively. The comprehensive closeness degrees of 18 batches of samples were 0.106 to 0.673. **CONCLUSIONS** The established quality control method is stable and reliable, which can be applied to the quality control of *I. salsoloides*, there are significant differences in the quality of medicinal materials from different producing areas.

KEYWORDS *Inula salsoloides* from Xinjiang; thin-layer chromatography identification; microscopic identification; content determination; entropy weight-TOPSIS method

新疆沙旋覆花为菊科旋覆花属植物沙旋覆花*Inula salsoloides*（Turcz.）Ostenf.的全草，又名黄花蒿、蓼子朴，在新疆各地均有分布[1]，其野生资源较丰富，民间常用作抗肿瘤药[2－3]。近年来，已有研究证实，新疆沙旋覆花的全草富含倍半萜内酯、黄酮类、三萜、挥发油等多种活性成分[2－5]，且具有显著的抗肿瘤药理活性[6－7]。本课题组前期从新疆沙旋覆花中分离得到18个单体化合物，并发现新疆沙旋覆花相关提取物及组分对多种肿瘤细胞具有显著的抑制作用，且部分组分还可通过诱导细胞裂亡和凋亡发挥抗食管癌活性[6－7]。

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