



基于TG-DTG的祖师麻甘草制的炮制机制研究

投稿时间: 2012-08-23 责任编辑: [点此下载全文](#)

引用本文: 孟祥龙,郭晓慧,张明生.基于TG-DTG的祖师麻甘草制的炮制机制研究[J].中国中药杂志,2012,37(23):3558.

DOI: 10.4268/cjcm20122311

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中文摘要:目的: 探讨祖师麻甘草制法的炮制机制。方法: 在热重分析仪上采用模拟空气(N₂-O₂ 4:1)为载气, 5 °C · min⁻¹升温速率, 对渗漉法提取的祖师麻有效部位-石油醚、氯仿、乙酸乙酯、正丁醇部位、甘草汁固体粉末-祖师麻有效部位与甘草汁固体粉末按原药比例10:1、10:2、10:3的混合物分别进行热解特性研究。结果: 与祖师麻有效部位的TG-DTG曲线比较, 刺激性较强的石油醚部位主要失重温度为320~390 °C, 且随着甘草汁固体粉末加入量的增加, 354 °C处的0.69% · min⁻¹的失重速率峰逐渐前移, 并最终与265 °C附近的失重速率峰合并; 另外, 祖师麻有效部位位于291 °C处的2.38% · min⁻¹和516 °C处2.42% · min⁻¹的失重速率峰向低温方向移动, 移动幅度约为20~26、19~50 °C, 前者失重速率峰峰值明显降低, 后者明显提高。结论: 随着甘草汁固体粉末加入量的增加, 祖师麻有效部位在程序升温下加热致使石油醚部位易于失去, 同时对于祖师麻的主要药效成分的损失起到减缓作用, 佐证了TG-DTG用于中药炮制机制研究的科学性, 及祖师麻经甘草制后刺激性降低的炮制机制。

中文关键词: 热重分析 祖师麻 有效部位 萃取部位 甘草汁 甘草制 炮制机制

Research on processing mechanism of Zushima which was stir-fried with licorice based on TG-DTG

Abstract: Objective: To investigate the processing mechanism of Zushima which was stir-fried with licorice. **Method:** Study of pyrolysis characteristics for extraction of Zushima effective part, petroleum ether, chloroform, ethyl acetate, *n*-butanol parts and the mixture of Zushima effective parts and licorice solid powder according to the proportion of 10:1, 10:2, 10:3 was carried out in the thermogravimetric analyzer, the simulation of air (N₂-O₂ 4:1) was chosen as carrier gas and heating rate was 5 °C · min⁻¹. **Result:** Compared with TG-DTG curve of Zushima effective parts, the major weightless temperature range of petroleum ether extraction which has strong stimulation was 320-390 °C, 0.69% · min⁻¹ weightlessness rate peak gradually moved forward with the addition of licorice powder, finally it was merged with the peak around 265 °C. In addition, effective department of Zushima at 291, 516 °C for 2.38% · min⁻¹ and 2.42% · min⁻¹ thermal weightlessness rate peak shift to lower temperature, the moving range were about 20-26, 19-50 °C, the former was significantly reduced, the latter was significantly increased. **Conclusion:** In the course of programmed temperature heating, petroleum ether department was easy to lose with the addition of licorice solid powder. At the same time, the main efficacy components of Zushima had a slow loss rate, which supported the processing mechanisms of TG-DTG method to research traditional Chinese medicine, and verified irritating characteristics that stimulus reduced after stir-fried with licorice.

keywords: thermogravimetric analysis Zushima effective parts extraction parts licorice stir-fry with licorice processing mechanism

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