真空冷冻干燥在中药材加工中的应用及质量控制(英文)

Application and Quality Control of Vacuum Freeze Drying in Processing Chinese Herb

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中文摘要：

中草药传统干燥加工过程中所造成的生物活性物质,特别是药用有效成分损失等问题,已引起国内外的普遍关注和担忧,真空冷冻干燥技术以其独有的特点和优势正逐渐成为贵重中草药干燥的首选。文中介绍了中草药真空冷冻干燥的原理和干燥过程中各阶段的工艺流程,并采用高效液相色谱法,以药材地黄的有效成分梓醇为检测指标,考察其在干燥过程中的化学动力学质量降解过程。通过试验确定了反应阶数、速度常数及模型参数,得出了控制其质量降解的预测模型,并对预测模型进行了验证。分析结果表明,所建立的质量降解模型能较好地反映地黄干燥质量随干燥时间、含水率及温度的变化过程,可用来进行中草药真空冷冻干燥质量降解的模拟。真空冷冻技术应用于中草药干燥能有效地保持中草药药用有效成分,避免传统干燥方法所造成的有效成分降低等缺陷

英文摘要：

The degradation of biochemical active mass especially curative compositions, during the traditional processing of Chinese herb has become an increasingly serious problem while the development and utilization of Chinese herb becomes more comprehensive. Based on the introduction to the principle and the technical points of vacuum freeze drying in Chinese herb processing, the degradation in the drying process of Chinese herb was analyzed through the measurement of catolpol content in Rehmannia by means of High Performance Liquid Chromatography. The reaction order, rate constant and the coefficient of the prospective quality control model were determined and verified by experiment. It is indicated that the method of vacuum freeze drying can effectively prevent the degradation during the traditional drying process of Chinese herb, and the quality control model developed in this paper can reflect the effects of moisture content, drying time and temperature on the degradation of curative compositions.

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