

研究论文

## 气相色谱-质谱法同时测定透皮接收液中的丙胺卡因和利多卡因

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**摘要** 建立了同时测定体外透皮接收液中丙胺卡因和利多卡因的气相色谱-质谱(GC-MS)分析方法。以罗哌卡因为内标, 样品经氢氧化钠碱化、乙酸乙酯萃取后采用GC-MS分析, 采用选择离子监测(SIM)模式进行定量分析。丙胺卡因和利多卡因两种药物均在0.016~50.0 mg/L范围内呈良好的线性关系; 回收率为85.3%~109.7%, 日内和日间测定的相对标准偏差均小于10%; 检出限分别为3 μg/L和2 μg/L。该方法操作简便, 选择性好, 灵敏度高, 适用于局部麻醉药物快速透皮吸收研究中丙胺卡因和利多卡因含量的分析。

**关键词** [气相色谱-质谱法](#) [丙胺卡因](#) [利多卡因](#) [透皮吸收](#)

## Simultaneous determination of prilocaine and lidocaine in transdermal receiving fluid using gas chromatography-mass spectrometry

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### Abstract

A method for the simultaneous determination of prilocaine and lidocaine in vitro percutaneous absorption liquid using gas chromatography-mass spectrometry (GC-MS) has been developed. Ropivacaine served as the internal standard. The sample was alkalinized with sodium hydroxide and a single-step liquid-liquid extraction with ethyl acetate. Selected ion monitoring (SIM) method was applied for the detection. Using the method to determine prilocaine and lidocaine in the rapid transdermal study. Prilocaine and lidocaine have good linear relationships in the concentration of 0.016-50.0 mg/L. The recoveries of prilocaine and lidocaine ranged from 85.3% to 109.7%, and the relative standard deviations of intra-day and inter-day were less than 10%. The limits of detection were 3 μg/L for prilocaine and 2 μg/L for lidocaine. This assay was time-saving, alternative and sensitive. It was suitable for the analysis of samples collected from the study on in vitro percutaneous absorption.

**Key words** [gas chromatography-mass spectrometry \(GC-MS\)](#) [prilocaine](#) [lidocaine](#) [percutaneous absorption](#)

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