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论文

麻黄碱—PVC膜电极的制备及其应用

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摘要：

本文介绍麻黄碱四苯硼盐—聚氯乙烯膜电极的制备及其应用于盐酸麻黄碱注射液和片剂的测定。电极膜由11%的电活性物质、44.4%的邻苯二甲酸二辛酯增塑剂和44.4%的聚氯乙烯组成。制成的电极的电位响应在盐酸麻黄碱浓度在10^{-1}～10^{-3}M范围内符合Nernst方程,检限下限为5.7×10^{-5}M。电极的重现性、稳定性良好,响应迅速,寿命也较长。用此电极按直接电位法测定盐酸麻黄碱注射液及片剂,步骤简捷,精密度良好,结果与容量法一致。

关键词： 麻黄碱 麻黄碱四苯硼盐—聚氯乙烯膜电极 直接电位法

CONSTRUCTION OF EPHEDRINE MEMBRANE ELECTRODE BASED ON TETRAPHENYLBORATE—PVC MATRIX AND ITS APPLICATIONS

ZENG Ji-yan

Abstract:

A membrane electrode based on incorporating ephedrine tetraphenylborate in a plasticized polyvinyl chloride film was prepared and the results of application to determination of ephedrine hydrochloride injection and tablet was reported. The elctrode shows Nernstian response over the concentration range from 10^{-1} M to 10^{-3} M with a slope of 58.7 mV/concentration decade and the detection limit was found to be 5.7×10^{-5} M. With this electrode to determine ephedrine hydrochloride injection and tablet by direct potentiometric method, satisfactory results were obtained. The coefficients of variation of ten determinations of injection and tablet were±1.2% and ±1.5% respectively and the results are in agreement with those obtained by volumetric method. No interferences is caused by excipients. The present method is more rapid and simpler than the volumetric method.

Keywords: Ephedrine tetraphenylborate—polyvinyl chloride membrane electrode Direct potentiometric method Ephedrine

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