

维生素B₂和B₆的同步荧光分析法及其在维生素复合制剂中的应用

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摘要:

本文建立了维生素B₂和B₆的同步荧光分析法。以 $\Delta\lambda=58\text{nm}$ 进行同步扫描所得的两个同步荧光峰(以发射波长表示,分别位于526nm和389nm)可用以同时分别定量维生素B₂和B₆。方法快速、灵敏。维生素B₂和B₆的工作曲线线性范围分别为0~1 $\mu\text{g/ml}$ 和0~1.5 $\mu\text{g/ml}$,检出限分别为0.5ng/ml和1ng/ml。方法已应用于三种复合维生素B制剂中维生素B₂和B₆的分析。

关键词: 维生素B₂ 维生素B₆ 荧光 同步扫描

SYNCHRONOUS SPECTROFLUORIMETRY FOR SIMULTANEOUS DETERMINATION OF RIBOFLAVIN AND PYRIDOXINE AND ITS APPLICATION IN MULTIVITAMIN PREPARATIONS

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Abstract:

A new method for the simultaneous determination of riboflavin and pyridoxine by synchronous spectrofluorimetry is described. The measurement was carried out in a buffer solution of pH 7 with $\Delta\lambda=58\text{ nm}$ for synchronous scanning. Under the experimental conditions two peaks appeared at 526 nm and 389 nm in the obtained synchronous fluorescence spectrum, corresponding to riboflavin and pyridoxine, respectively. This method was proved to be simple and specific. The fluorescence relative intensity is linearly related with concentration over the range of 0 ~ 1 $\mu\text{g/ml}$ and 0 ~ 1.5 $\mu\text{g/ml}$ for riboflavin and pyridoxine, respectively. The detection limit was 0.5 ng/ml for riboflavin and 1 ng/ml for pyridoxine. The relative errors of the measurements were less than 5% for artificial samples. The proposed method has been applied to the analyses of riboflavin and pyridoxine in three kinds of commercial multivitamin preparations. The obtained synchronous spectra of multivitamin preparations coincided with those of the mixed standard solution of riboflavin and pyridoxine. Recoveries of 93.5~105.7% were obtained.

Keywords: Pyridoxine Fluorescence Synchronous scanning Riboflavin

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