

论文

红外光谱定量法测定喜树碱半缩酮中喜树碱的含量

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摘要:

本文报告了一种用于红外光谱定量分析的比例方法,并用此法测定了喜树碱半缩酮(II)中少量喜树碱(I)的含量。在红外光谱中,II有一内酰胺羰基谱带,I有一内酰胺羰基谱带和另一内酯羰基谱带。由于此二化合物结构类似,分子量接近,按Beer定律推导,在II中有少量I时,红外光谱中内酯羰基谱带吸光度与内酰胺羰基谱带吸光度之比(R)应与I的含量(C₁)成正比。实验结果证明,以R对C₁作图所得之标准曲线通过原点,线性关系良好。测定时系用KBr压片,样品无需称量。本法操作简便,结果稳定,误差小于2%。

关键词:

THE DETERMINATION OF CAMPTOTHECIN IN ITS HEMI-KETAL COMPOUND BY IR METHOD

Yang Shude; Guo Zongru and Guo Jiyu

Abstract:

In this paper, a "ratio method" of quantitative analysis by infrared spectrophotometry was reported. This method was applied to the determination of small amounts of Camptothecin (I) which was present as a contaminant in synthetic camptothecin hemi-ketal (II). Compound II showed an absorption band of lactam carbonyl group in the IR spectrum while compound I had in addition a δ-lactone absorption band. Because of the similarity in structure and the closeness of the molecular weights of these two compounds, it was derived from Beer's law that the ratio (R) of the δ-lactone band to that of the lactam band should be proportional to the amount of compound I present in compound II. Experimental results confirmed this and the plot of R vs C₁ (concentration of compound I) gave a straight line passing through the origin. Pressed KBr disks were used for the analyses. The samples need not be weighed. This method is simple and the results are reproducible to better than ±2%.

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