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标题: Far-IR and THz Absorption Spectra Studies of Metronidazole, Tinidazole and Ornidazole

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来源出版物: SPECTROSCOPY AND SPECTRAL ANALYSIS 卷: 32 期: 4 页: 906-909

DOI: 10.3964/j.issn.1000-0593(2012)04-0906-04 出版年: APR 2012

在 Web of Science 中的被引频次: 0

被引频次合计: 0

引用的参考文献数: 13

摘要: Metronidazole, tinidazole and ornidazole are 5-nitro-imidazole medicines used particularly for anaerobic bacteria and protozoa infections. The present paper reports that terahertz time-domain spectroscopy (THz-TDS) and Fourier transform infrared spectroscopy (Far-FTIR) were used to measure the fingerprint spectra of metronidazole, tinidazole and ornidazole in the frequency range of 0.9 similar to 19.5 THz under the room temperature. In addition, THz-TDS was also used to measure the absorption spectra of pure tinidazole and tinidazole tablets from different manufactures between 0.2 and 2.2 THz. In parallel with the experimental study, the cross correlation analysis was applied to compare the array of correlation coefficients between pure tinidazole and different tinidazole tablets. Results show that the method is rapid, simple and accurate to identify their effective chemical compositions and stability when the FTIR and THz spectra data combine with the array of correlation coefficient. Our research provides a visual approach to the standardization of the quality control in the production and sale of such drugs.

入藏号: WOS:000302450000010

语种: Chinese

文献类型: Article

作者关键词: Metronidazole; Tinidazole; Ornidazole; THz-TDS; FTIR; Correlation coefficient

KeyWords Plus: TERAHERTZ SPECTROSCOPY

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出版商: OFFICE SPECTROSCOPY & SPECTRAL ANALYSIS

出版商地址: NO 76 COLLAGE SOUTH RD BEIJING, BEIJING 100081, PEOPLES R CHINA

Web of Science 分类: Spectroscopy

学科类别: Spectroscopy

IDS 号: 921AI

ISSN: 1000-0593

29 字符的来源出版物名称缩写: SPECTROSC SPECT ANAL

ISO 来源出版物缩写: Spectrosc. Spectr. Anal.

来源出版物页码计数: 4