

平成 29 年度「日本薬局方の試験法等に関する研究」研究報告 低波数領域を利用したラマン分光法の校正基準に関する研究^{*3}

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Study of Standard Materials for the Correction of Low-frequency Raman Spectra

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Summary

The purpose of this study was to investigate standard materials for the correction of low-frequency Raman spectra. We selected five compounds, sulfur, acetaminophen, L-cystine, cyclohexane and polystyrene, as candidate reference standard materials, and measured their low-frequency Raman spectra. Several peaks were confirmed in the spectra of crystalline compounds (sulfur, acetaminophen and L-cystine), while no peak was observed in the spectra of non-crystalline compounds (cyclohexane and polystyrene). Thus, non-crystalline compounds are not suitable as standard materials. Acetaminophen showed different Raman spectra in the low-frequency region depending upon its polymorphic form and crystal habit. Therefore, it is important to choose a stable crystalline form as a standard material, and to ensure that the material shows a consistent crystal habit, in order to obtain consistent standard Raman spectra.

Key words

Raman spectroscopy, Low-frequency, Correction, Acetaminophen