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Book review

***Pharmaceutical Excipients—Characterisation by IR, Raman, and NMR Spectroscopy*. David E. Bugay, W. Paul Findlay, Volume 94 in Drugs and the Pharmaceutical Sciences, Edited by James Swarbrick, Marcel Dekker, New York, 1999. ISBN 0-8247-9373-0, xii + 669 pp.**

This will be received well by those in pharmaceutical analysis who identify excipients by spectroscopy. IR, Raman and NMR spectra are given in alphabetical order in A4 format for 300 excipients together with a Correlation Table of Characteristic Frequencies in a clearly laid out fashion.

The first two chapters give an overview of the principles of Vibrational Spectroscopy (IR and Raman) and NMR Spectroscopy. They are short and to the point and are typical of introductory chapters for these techniques.

The third chapter is an essential description of how the spectra were obtained to enable a reader to use properly the spectra that follow. Materials were guaranteed as authentic and pure before use and all had certificates of analyses. Most of the IR spectra were obtained using alkali halide disks or by diffuse reflectance. There was a tendency to use diffuse reflectance because of ease of sample presentation, ability to obtain high quality spectra and the assurance that a true spectrum was obtained. The IR spectra were run on a Nicolet 740 FTIR instrument and the Raman spectra on a Nicolet 950 FT-Raman instrument. Most of the NMR spectra were obtained in the solid state as ^{13}C NMR spectra on a Bruker AM-250 FT-NMR instrument using TMS as the external reference. ^{31}P spectra were also obtained in the solid state.

Most of the book (600 pages) is devoted to the display of the spectra—NMR spectra on the left hand page, and IR and Raman spectra (plotted together) on the right hand page. The spectra are clearly laid out with peak listings for the major peaks adjacent to each spectrum. They are very good quality spectra and easy to use. Additional useful information is included on each page such as the way the spectrum was acquired, Chemical Abstract Service Registry Number, molecular formula, molecular weight, other names, grade and excipient class.

After the collection of spectra there are Appendixes on Characteristic Raman and Infrared Frequencies, Correlation Charts for Infrared Frequencies and Representative Chemical Shift Values for NMR Spectroscopy to further assist the analyst to identify excipients.

The standard of the spectra is first class as would be expected from David Bugay and his associate. They and Bristol–Myers Squibb are to be congratulated on making this collection of spectra easily available to the scientific community. This volume will fill a niche in many pharmaceutical analysts' bookshelves and those who identify excipients or are in R&D sections using spectroscopy will find it invaluable.

In the Preface the authors ask for suggestions—the answer is obvious, where are the NIR spectra? Hopefully these will be included in future volumes.

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