

*Methods of biochemical analysis*

Volume 24

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This series of volumes started in 1954 continues to make progress in filling shelves in probably all self-respecting biochemistry libraries, where it provides not only much useful analytical detail for the aficionado but also provides for the casual reader an easily accessible introduction to a wide range of biochemical topics. This volume, the 24th in the series, reaches the same high standard of the previous volumes. The production as usual is excellent with very few observed errors, but there may be some red faces when the misspelling of fluorine is found not only on the contents page but in the running title (pp. 165–201).

There are five contributions. The analysis of morphine and related analgesics by gas phase methods, gives practical methods for extraction procedures, and analysis by gas chromatography and gas chromatography–mass spectrometry. Methods for the analysis of connective tissue macromolecules by determination of certain constituents are given in detail for proline, hydroxyproline, hydroxylysine, hexosamines, uronic acids and some hydroxylase enzymes. The determination of fluorine in biological materials occupies 105 pages and the subject is reviewed critically and comprehensively with 716 references. Recent developments in techniques have led to the discovery of two fractions of fluorine, ionic and non-ionic, in blood serum. The chapter on the determination of heparin and related sulfated mucopolysaccharides provides an excellent survey of different methods used for extraction, fractionation

and characterization, the preparation of radioactive compounds and methods of quantitation. Field desorption mass spectrometry (FD-MS) and its application in biochemical analysis is the subject of the final contribution in this volume. Mass spectrometry with electron impact, chemical ionization and field ionization are already well established and better known. FD-MS involves ionization of the sample from its adsorbed state on a fine tungsten wire or carbon needle emitter and is particularly useful for nonvolatile and thermally labile substances. Examples are given of the applications of FD-MS to nonvolatile compounds such as trisaccharides, sugar phosphates, organic sulphates and sulphonic acids, nucleotides, amino acids, peptides, antibiotics and a range of different types of molecules used as drugs. Pyrolysis FD-MS is also being used for DNA and polysaccharides. Of particular interest are the examples shown of comparative spectra obtained with electron impact mass spectrometry.

This book is essential reading for all research workers who have any interest in the topics covered, but in addition the casual reader will gain a useful insight by reading those relevant paragraphs which provide a concise, authoritative and easily-read introduction. The price is not excessive for library purchase but for personal buyers a cheaper soft-back edition would be highly appreciated.

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