# Histological and Histochemical Methods: Theory and Practice, 4th edition

*John Kiernan*
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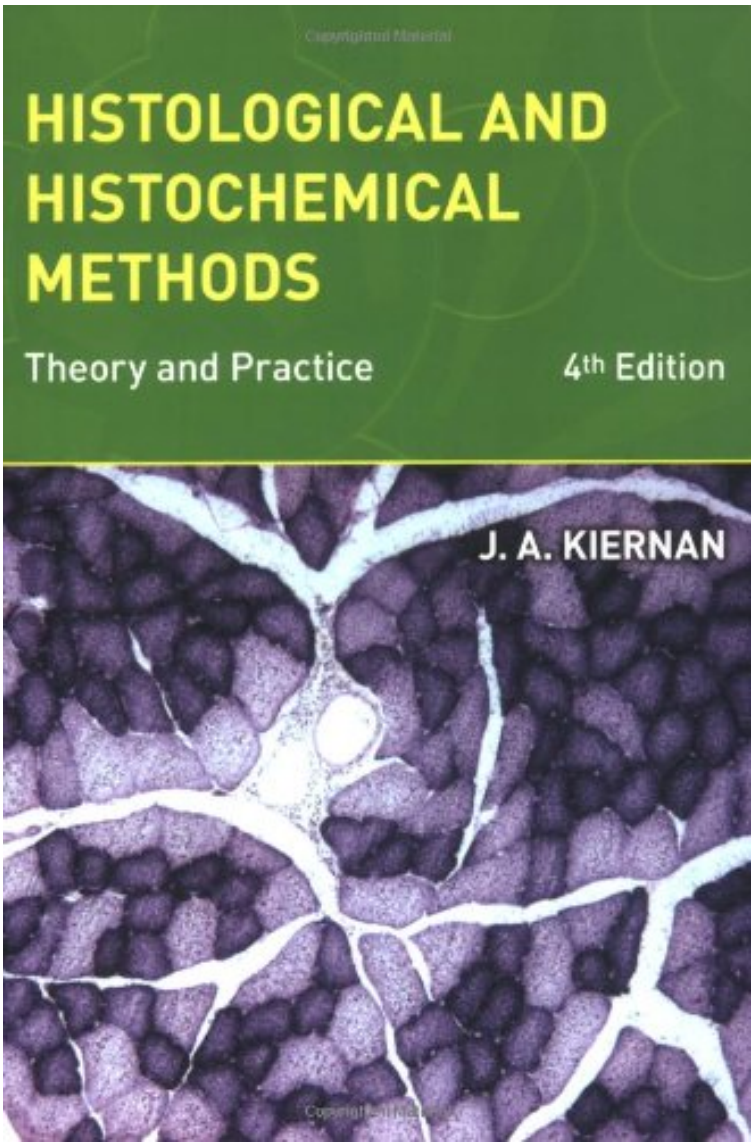




#1741489 in Books Cold Spring Harbor Laboratory Press 2008-03-01Ingredients: Example IngredientsOriginal language:EnglishPDF # 1 9.20 x 1.40 x 6.13l, 2.70 #File Name: 1904842429606 pages | File size: 77.Mb

**John Kiernan : Histological and Histochemical Methods: Theory and Practice, 4th edition** before purchasing it in order to gage whether or not it would be worth my time, and all praised Histological and Histochemical Methods: Theory and Practice, 4th edition:

1 of 1 people found the following review helpful. Histological and Histochemical MethodsBy Janelle L LivesayExactly what I was looking for in a book with respect to staining procedures, the various steps taken within each procedure in as far as the methods and I am using it to do the cert. exam practice protocols.0 of 0 people found the following review helpful. Awesome bookBy Fat guyGreat book with rationale and protocol of various histological methods. Sadly the font used to print this edition is not so suitable for reading as in 2nd edition.0 of 0 people found the following review helpful. Five StarsBy BrigitteVeroy theoritical but good to learn the basic chemistry

The chemical and physical principles of fixation, staining, and histochemistry in one volume!Now in its fourth edition, Histological and Histochemical Methods has been expanded and updated with the latest techniques and developments within the field, whilst retaining the details of the classic techniques still in use. The relations of chemical structures and reactions to fixation, tissue processing, staining, enzyme location, immunohistochemistry and other procedures are explained in simple, descriptive terms.This book is recommended for lecturers and students in biological and biomedical disciplines using histological and histochemical techniques. Postgraduate researchers will find this to be the ideal laboratory companion, as will medical laboratory technologists preparing for their professional examinations.

John Kiernan has published extensively on histochemical methods since his first scientific paper in 1964. His textbook encompasses his wide personal experience and interest in dyes, staining and histochemical methodologies. It is exceptional that he is the sole author of such a compendium in light of the wide range and amount of material included... To understand the mechanisms or pitfalls involved in a specific histochemical technique, one usually can find the answer in only a very select group of books that deal with the theory and practice of histological and histochemical techniques. It was a pleasure to see that John Kiernan continues to update his book. Most practicing histochemists and research students involved in biomedical research and diagnostic histopathology tend to use histochemical methods without understanding the chemistry involved in the staining reactions or the limitations of the procedures. It is common practice to use a recipe book of histological and histochemical methods and follow the procedures. Unfortunately, there is an overall lack of interest in the chemistry of the dyes or how they stain specific products in cells and tissues and the last time that many histochemists considered chemical formulae was often during their undergraduate studies. The current book by Kiernan takes into account the chemistry involved with the premise that such knowledge makes us better histochemists and researchers. Or in the words of the author: "It cannot be overemphasized that unless the student or technician understands the rationale of all that is to be done, he will not do it properly". A similar situation occurs in recording images with a microscope. If you understand the construction of the instrument and its optical components and set it up accordingly, you will be a much better microscopist and obtain optimal images. The first edition of this book appeared in 1981, with subsequent editions in 1990 and 1999. This latest edition includes in a single volume an extensive survey of the chemical and physical principles of fixation, staining, and histochemistry. In addition to the classical techniques still in use, the new edition has been expanded to include more recent developments and includes newer procedures that are anticipated to become standard methods in research and diagnostic histopathology. The book encompasses the relations of chemical structures and reactions to fixation, tissue processing, staining, enzyme localization and immunohistochemistry. The first four chapters contain descriptions of the newer reagents and techniques, with subsequent chapters dealing with historical "classical" staining with dyes. The chapter on nucleic acids now includes discussion of in situ hybridization and methods for detecting apoptotic cells. Although the histological and histochemical techniques for animal tissues predominate, there is now some discussion and methodology also applicable to fixation, processing and staining of plant tissues and microorganisms. The bibliography is extensive and encompasses over 1300 references. The text is written in classical English spelling and not US spelling (e.g. colour, haematoxylin, sulphuric, bisulphite etc.). I do not know how this affects the readership in the major markets in the US. The author tries to correct the inconsistencies of biologists in their spelling of names of dyes. The ending "-ine" should be used when the dye is an amine or a derivative of an amine (e.g. fuchsine and not fuchsin, safranine and not safranin), whereas for a dye that is not an amine, there is no terminal "e" (e.g. eosin and not eosine, haematein and not haemateine). I think that the widespread use of incorrect spelling (e.g. fuchsin) will mean that this spelling has now become the custom and acceptable, apart from correction of manuscripts by pedantic and critical editors. It may be a surprise for the general reader to learn that hematoxylin is not a dye, but only after its partial oxidation to its active ingredient, hematin. This explains why we leave freshly made hematoxylin solution to mature in order for it to become effective (if you do not purchase a commercial solution of hematoxylin, which now seems to be common practice). The correct term for H E staining is Hemalum and Eosin. I was also pleased that the correct explanation for the von Kossa technique was given. It is commonly designated as a histochemical method for calcium but it is really a method for phosphate and carbonate, the anions with which the metal is associated in normal and pathological calcified tissues. I personally believe that this text should be found on the bookshelves of every histology and histochemistry laboratory as a basic reference source. It is not a book to be read from start to finish, but should be consulted by researchers and in particular students before undertaking histochemical staining procedures. The book is very reasonably priced and to be objective, the purchase price is less

than the cost of one or two antibodies or most laboratory chemicals, which, unlike a book, have a very limited life. -- Raymond Coleman Acta HistochemicaAbout the AuthorJ.A. Kiernan: MB ChB PhD DSc, Professor, Department of Anatomy and Cell Biology, The University of Western Ontario, London, Canada.