

BOOK REVIEW

Immunohistochemistry: a technical guide to current practices

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This book is an excellent technical guide for all medical laboratory scientists and technicians performing immunohistochemistry (IHC).

In the first part of the book the authors give the reader an in-depth understanding of IHC fundamentals by taking the reader into its history, development and basic principles. Chapter 1 serves as an introduction to IHC principles and the people credited for its discovery and development. It is such an important tool in research applications and diagnostic endeavours for all clinicians, scientists, laboratory staff and managers to understand its fundamentals before exploring its wonders.

It is well written and principles are described along with illustrations, helping the readers understand the bigger picture without being overwhelmed. The development of antigen retrieval methods and polymer detection systems is also discussed by the authors. This included the various labels acquired, and the process involved to detect them. Likewise, technologies invented to increase sensitivity and standardization efforts are raised. The authors also guide readers through a good quality management system and cited a very helpful template. This chapter not only serves as a reminder of the importance of "quality" matters in IHC, but also allows an appreciation of the huge hurdles that must be overcome to guarantee a reliable and accurate IHC stain.

The guide covers the three main automated platforms that are currently used in performing IHC. Firstly, the Leica Bond III, a reliable, efficient and fully automated instrument with robotics for immunohistochemistry. The principles of the Leica Bond III instrument are explained thoroughly as well as its polymer detection kits and the bond staining protocols. Bond quality control and maintenance of the bond are well written to guide the users. Secondly is the Roche Ventana Benchmark Ultra.

The unique technology behind Ultra lies in the Ultra LCS, individual slide drawers and ability to perform manual primary antibody application. The authors also explained the machine's principles well. And the last machine that the authors sighted in this guide is the Agilent Dako Omnis, although a large instrument, its modern design aesthetics with attached touch screen and status light bar are the highlights. There are great explanation of its principles and robust quality control systems. Sufficient details are provided on how technology has been applied to automating the process of IHC. Each of the machines covered are well labelled and principles are explained in a very concise manner. Each commercially available, automated IHC platform has strategic design differences with their own advantages and disadvantages. Understanding these differences can help match the demands of testing volumes, turnaround times, standardization and labour savings toward the appropriate instrumentation.

In research applications, there is no limit when it comes to IHC, and the authors direct the readers to a strategic approach and technical tips. The chapter on troubleshooting served as a treatise on why things can go awry and offered practical advice to readers on how to rectify problems encountered in IHC.

The final chapter discusses the current status of IHC and the future of IHC applications which is very exciting for the readers. As I read, it takes me to what I am actually doing on the bench, what is happening and how I can make improvements.

Comprehensive yet practical and concise, the Immunohistochemistry, technical guide to current practice will be of great value for medical laboratory scientists, technicians, managers, pathologists and clinicians alike.

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