International Journal of Current Research and Review

Editorial

IJCRR
Section: Healthcare
Sci. Journal Impact Factor: 5.385 (2017)
ICV: 71.54 (2015)

Immunohistochemistry

Sachin B. Ingle

Professor & Surgical Pathologist, Department of Pathology, MIMSR Medical College, Shri Siddheshwar Surgical Pathology & Research Centre, Latur 413512, Maharshtra India.

Immunohistochemistry has become an important adjunct in the evaluation of human neoplasms. The commercial availability of a broad range of reagents (including prediluted reagents in kit form) has made it possible for high-quality immunohistochemistry to be performed in most pathology laboratories. The most commonly employed immunohistochemical techniques are those in which enzymes, such as horseradish peroxidase or alkaline phosphatase, are used in conjunction with specific antibodies to provide color reactions at sites of antigen-antibody interactions. Variations of the *avidin-biotin complex* (ABC) technique are currently the most widely utilized in current practice. The ABC procedure generally requires three sequential steps: an unlabeled primary antibody, a biotin-labeled anti-immunoglobulin secondary antibody, and, finally, preformed avidin-biotin-peroxidase complexes. One variation of the ABC method employs streptavidin, which has greater sensitivity than avidin and exhibits less nonspecific binding. It should be noted that the sensitivity of any immunohistochemical procedure is, in large part, related to the reagents and detailed procedures employed. As a consequence, it is difficult to compare the results of immunohistochemical studies from different institutions that employ different reagents and methods.

Virtually any type of pathologic specimen may be suitable for immunohistochemical staining, including fresh frozen tissue, fixed tissue, and cytologic preparations. Unfortunately, however, not all antigens are equally well preserved after these various treatments, and the approach taken for immunohistochemical staining must depend on the antigen(s) of interest. For example, although a large number of cytoplasmic antigens are detectable in fixed, paraffin-embedded tissue, other antigens, such as many cell surface-associated antigens, are destroyed or masked by common fixatives and may be demonstrable only in fresh frozen tissue or in cytologic preparations. Antigen retrieval methods, such as pretreatment with proteolytic enzymes or heating (using a microwave oven, steamer, pressure cooker, or autoclave), may permit the identification of otherwise undemonstrable antigens in fixed, paraffin-embedded tissue sections. Finally, not all fixatives are equivalent with regard to antigen preservation. Although cross linking fixatives, such as formaldehyde, are often suitable, they are suboptimal for detecting certain antigens of diagnostic importance, such as those located on intermediate filaments, which are best demonstrated in fresh-frozen or alcohol-fixed tissue. Wishing the readers a happy reading.

Corresponding Author:

Dr. Sachin B. Ingle [MD Pathology], Professor & Surgical Pathologist, Department of Pathology, MIMSR Medical College, Shri Siddheshwar Surgical Pathology & Research Centre, Latur 413512, Maharshtra India; **Editor in chief** "International Journal of Current Research & Reviews", India; Email: dr.sachiningle@gmail.com

ISSN: 2231-2196 (Print) **ISSN:** 0975-5241 (Online)