

## **APM 848 BASIC AND APPLIED IMMUNOHISTOCHEMISTRY**

**Workload:** 30 hours

**Credits:** 02

**Nature:** Optional Master and PhD

**Professors** from the Pathology Department

**Discipline Syllabus:** It is an instrumental discipline that aims to provide basic concepts of the immunohistochemical method and its applications in research and diagnosis. It includes a theoretical part where the concepts and stages of technical processing are discussed and a practical part of the laboratory, where students complete test reactions, different techniques of tissue processing, and analysis of reactions.

**Program:**

The course will consist of theoretical bases and laboratory practice including the following topics:

1-Fixation of tissues: Basic science on mechanisms of tissue fixation. Selection of fixatives: types, mixture and relation with the antigens used. Fixation conditions: method of fixation, concentration, pH, temperature and time.

2-Tissue processing: Automatic versus Manual. Paraffin embedding blocks. Cutting of blocks and adhesion of cuts on blades.

3-Background staining and nonspecific reactions: Non-specific binding with tissue proteins (electrostatic forces). Endogenous peroxidase and biotin activities. Blocking procedures. Cross-reactivity with endogenous immunoglobulins in animal tissue.

4-Evaluating the results: Knowledge of the ranges of normal and abnormal tissue reactivity. Heterogeneous expression of antigens by tumors: real or artificial. Controls indicated.

5-Immunohistochemistry in breast cancer: Panel of the most used antibodies / purpose and case presentation.

### **Bibliographic References:**

ALVES VAF, BACCHI CE, VASSALO J. Manual de Imuno-histoquímica. Sociedade Brasileira de Patologia. São Paulo. 1999.

LEHR HÁ ET AL. Quantitative evaluation of Her-2-neu status in breast cancer by

fluorescent in situ hybridization and by immunohistochemistry with image analysis. *Am J Clin Pathol* 115 (6): 814-22, 2001.

MILLER RT, SWANSON PE , WICK MR Fixation and epitope retrieval in diagnostic immunohistochemistry: a concise review with practical considerations. CD-Rom XXIII Congresso Brasileiro de Patologia (2001).

*Appl Immunohistochem Mol Morphol Sep*;8(3):228-35, 2000.

WESTER K ET AL. Paraffin section storage and immunohistochemistry. *Applied Immunohistochemistry and molecular morphology*. 81(1): 61-70, 2000.