

Course Syllabus of Immunohistochemistry

Faculty: Medicine and Health Sciences .

Department: Health Sciences.

Program: Bachelor in Medical laboratory.

I. General information about the course instructor :

Name	Dr. Mohammed Almorish	Office Hours(3 Hours Weekly)					
Location & phone number	777590437	Sat	Sun	Mon	Tue	Wed	Thu
Email	Almorish70@gmail.com	1		1			1

II. General information about the course:

1.	Course Title :	Immunohistochemistry				
2.	Course Code and Number :	BMLL 03				
3.	Credit Hours :	Credit Hours				Total
		Theoretical	Seminar/Tutorial	Practical	Training	
		2	-	-	-	2
4.	Study Level and Semester:	Elective course				
5.	Pre-requisites:	None				
6.	Co-requisites:	None				
7.	Program in which the course is offered:	Bachelor in Medical laboratory				
8.	Teaching Language:	English				
9.	Instruction location:	Sana'a				

عميد الكلية:
د. عبدالله المخلافي

رئيس القسم
د. عبد الحبيب القباطي

مدير الجودة

جامعة العلوم والتكنولوجيا
إدارة ضمان الجودة والاعتماد
المراجع:
د. محمد السباي
APPROVED

الموصف:
د. محمد المرش

III. Course Description

The aim of this course is to provide students with an essential basics concepts in immunohistochemical procedures and its need in tumor biology science using the available tools. The course will mainly focus on slide preparation, the antibodies selection and preparation, epitope unmasking and retrieval, blocking and staining methods used in Immunohistochemistry procedures. Upon completion of this course, the students should be able to explain and discuss the relevant procedures of Immunohistochemistry and their meaning in the context of clinical laboratories.

IV. Course Aims: This course is aimed to

1. Define different methods and techniques for preparation of different specimens regarding paraffin, frozen and immunohistochemical sections and methods.
2. Describe the detailed selection and functions of the monoclonal and polyclonal antibodies and their uses in Immunohistochemistry.
3. Outline the different problems and troubleshooting in antigen retrieval, blocking and staining methods in Immunohistochemistry.
4. Define quality standards of the practice with fundamentals of ethical and legal issues.

V. Course Intended Learning Outcomes (CILOs) :

After completion of this course student should be able to:

1. Demonstrate concepts of Immunohistochemistry.
2. Illustrate the procedures and the different problems and troubleshooting in Immunohistochemistry procedures.
3. Compare between different types of antibodies , fixatives blocking methods used in Immunohistochemistry.
4. Interpret and verify results of Immunohistochemistry tests and errors.
5. Use different methods in the diagnosis of tumor diseases .
6. Write a professional descriptive report related to investigation.
7. Communicate actively with other staff members as well as the employees and students.
8. Perform continuous medical education.

VI. Course Contents

Theoretical Aspect:

No.	Course Units	Sub-topics	Week due	Contact Hours
1	The basics role of Immunohistochemistry in the Laboratory	- Immunohistochemistry Uses and Considerations - Antibodies, Antigens, and Epitopes - Match each of the following terms to the correct definition.	1 st , 2 nd	4

2	Antibodies	<ul style="list-style-type: none"> - Monoclonal Antibodies - polyclonal Antibodies - Ag-ab interaction concepts. - Ab Labeling 	3 rd	2
3	Fixation	<ul style="list-style-type: none"> - Cross linking fixatives - Precipitating fixatives - Handling ,uses and precautions 	4 th	2
4	Processing and Microtomy. Epitope Retrieval	<ul style="list-style-type: none"> - Principles of sectioning (Frozen and paraffin) - General Epitope/Antigen Unmasking - General Epitope/Antigen Unmasking 	5 th , 6 th	4
5	Mid-term Exam		7 th	2
6	Permeabilization for Intracellular Staining. Blocking Non-Specific Binding	<ul style="list-style-type: none"> - General permeabilization and Blocking Methods - Protein blocking - Avidin/Biotin Blocking - Enzyme Blocking 	8 th , 9 th	4
7	Immunohistochemistry Methods	<ul style="list-style-type: none"> - Indirect Method - Direct Method - Avidin-Biotin Complex (ABC) Method - Peroxidase, Anti-Peroxidase (PAP) Method 	10 th , 11 th	4
8	Immunohistochemistry Staining Reagents and Controls	<ul style="list-style-type: none"> - General Reagents (Chromogens, counterstaining, mounting) - Antibody Diluents - Buffers, - Tissue Controls/Control Slides - Quality Control (QC) 	12 th , 13 th	4
9	Some Applications of Immunohistochemistry and Tumor markers	<ul style="list-style-type: none"> - In Breast Cancer. - In lung Cancer. - In Prostate and ovarian Cancer. - Other tumor markers 	14 th , 15 th	4
10	Final Exam		16 th	2
Total number of weeks and hours			16	32