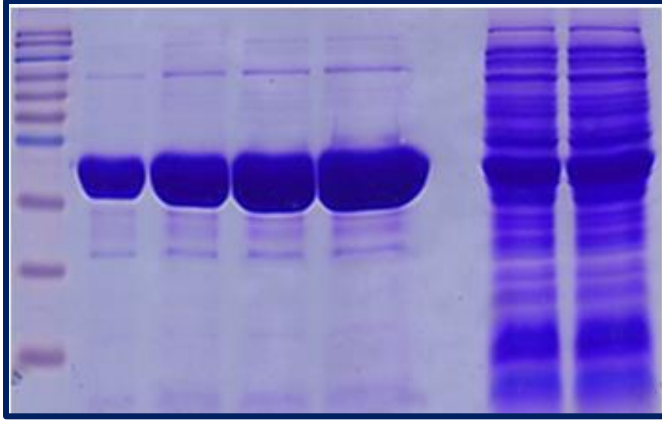


## Workshop on Proteins Electrophoresis and Blotting Techniques



In the period  
13 - 15 March 2022

## الاستعلام والحجز

منسق الحلقة

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د. / نفرتيتي النخيلي

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قسم التدريب

معهد الدراسات العليا والبحوث - ١٦٣ طريق

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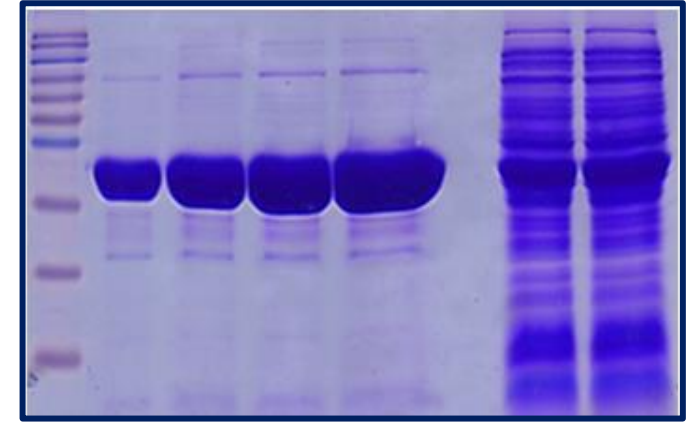
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يحصل المتدرب على شهادة معتمدة وموثقة من

جامعة الاسكندرية

## ورشة عمل في

## Proteins Electrophoresis and Blotting Techniques



خلال الفترة

١٣ - ١٥ مارس ٢٠٢٢

## Course Description

Almost all bioscience researchers will carry out protein analysis at some point in their careers. Appropriate protein extraction methods, electrophoresis, and protein transfer, immunodetection of blotted protein by antibodies, and the final phase of imaging and data analysis are all part of a symphony. Western blotting is used to detect the presence of specific proteins, to determine the extent of post-translational modifications, to verify protein expression in cloning applications, to analyse protein and biomarker expression levels, to map antibody epitopes, and to test for disease markers in clinical settings. Western blotting, like any other tool in life sciences research, can provide erroneous and irreproducible results. We present a method for generating quantitative data from Western blot experiments that includes key validation phases for identifying and reducing sources of error and variability throughout the western blot process.

### Other Objectives

To provide training in basic protein electrophoresis and blotting techniques this includes basic principles of polyacrylamide gel electrophoresis, basic principles of western blotting technique and analysis, selecting the right antibodies for your western including the appropriate controls, the advantages of chromogenic detection versus ECL method and troubleshooting in protein electrophoresis and western blotting techniques.

## Target Participants

This workshop is intended for research scientists, graduate and postgraduate students who require knowledge in molecular biology techniques, laboratories supervisors and technicians.

### Day1

|               |   |
|---------------|---|
| Lecture 9-10  | <i>Introduction to protein isolation and purification: practical approach.</i>        |
| Lecture 10-11 | <i>Sodium dodecyl sulphate polyacrylamide gel electrophoresis versus native gels.</i> |

### Practical session - Day1

- ◆ *Methods of protein determination and quantification: Bradford, BCA, and UV at 280 nm.*
- ◆ *Sample preparation for Electrophoresis.*
- ◆ *Sodium dodecyl sulphate polyacrylamide gel electrophoresis.*
- ◆ *Visualization of proteins after electrophoresis.*
- ◆ *Transfer of proteins into nitrocellulose and PVDF membranes.*
- ◆ *Visualization of proteins after transfer into nitrocellulose and PVDF membranes using Ponceau Red Stain.*
- ◆ *Blocking of membrane using different types of inert proteins.*

### Day2

|               |  |
|---------------|--|
| Lecture 9-10  | <i>Western blotting techniques: principles and applications.</i> |
| Lecture 10-11 | <i>Principles of glycoproteomics.</i>                            |

## Practical session – Day2

- ◆ *Complete western blotting of day 1: conjugation with antibody, washing and detection.*
- ◆ *Silver staining of Lipopolysaccharides.*

### Day 3

|                  |   |
|------------------|---|
| Lecture 9-10     | <i>Quantification of western blotting using ImageJ.</i>                   |
| Lecture 10-11.30 | <i>Aspects of protein crystallization for 3D structure determination.</i> |

## Course Book

Protein electrophoresis and blotting techniques workshop book will contain recent materials for most of the topics covered in the course theoretically and practically. In addition, a CD contains most of the protocols and methodologies covered will be available.

## Course Includes

- ◆ Certificate of Participation issued by Institute of Graduate Studies and Research, Alexandria University.

## Course Fee

The registration fee for the workshop is 1200 Egyptian pounds.