



# Masterclass in Immunohistochemistry and Molecular Biology Tools in Biomedical Research

Faculty of Dentistry

## Introduction

This masterclass is designed for beginners those wishing to learn appropriate molecular tools and immunochemistry in biomedical research. It is a comprehensive masterclass that covers how the technology works, different types of detection technologies, designing primes and probes, optimising new assays with stable reference genes and proper normalisation. The focus will be on hands-on lab work for Polymerisation Chain Reaction (PCR) assay performance and immunohistochemistry staining. After the workshop, participants will be able to plan and perform PCR and immunohistochemistry experiments themselves, as well as interpret and analyse data.

## Content

- Basics of DNA, primer design and sample preparation
- Primer/probe design with Beacon Designer Software demonstration
- Fundamentals and applications of PCR
- ELISA and protein multiplex
- Immunohistochemical staining
- DNA extraction
- DNA quantification and integrity checking using automated electrophoresis system
- PCR software setup and data analysis

## What will you learn?



Have a close understanding of genes, role of coding and non-coding part of DNA on human health and diseases by biomedical researchers and health professionals.



Select proper molecular techniques to conduct a study.

## Who Should Join?

- Year 1 and 2 Doctor of Dental Surgery (DDS) students
- Anyone who is interested in Immunohistochemistry and Molecular Biology

## Duration

7 hours

## Certification

Certificate of Completion by MAHSA University



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