Application of PCR in Diagnostic Molecular Genetics

Introduction

The Center of Excellence in Genomic Medicine Research (CEGMR) at King Abdul Aziz University is pleased to announce the international workshop on 'Application of PCR in diagnostic molecular genetics'.

This workshop is organized by continuous education and outreach program at CEGMR as part of its mission in education, research and service to the community.

CEGMR is an established platform that provides cutting edge research and professional education. CEGMR strives to provide training courses, workshops, and conferences of scientific importance to provide an opportunity to scientists interested in the field.

Objectives

Molecular genetics has many applications in diagnostics and its considered an integral part of many diagnostic laboratories worldwide. This workshop will provide an opportunity for participants to learn basic techniques related to DNA and RNA, and their applications in molecular diagnostics. The participants will participate in experimentation involving nucleotide extraction all the way through to PCRs and RT-PCRs. Most methods will revolve around gel electrophoresis and usage of gel documentation system.

Dates, Location & Duration

The course will be held in the laboratories of the CEGMR, King Fahd Medical Research Center based at King Abdul Aziz University. Lectures and practical sessions will be held daily from 8:00 a.m. to 4:00 p.m, from Saturday to Wednesday.

Documents and Certificates

Participants who successfully complete the theoretical and practical parts will be awarded a certificate of completion.

The workshop is accredited by the Saudi Council for Health Specialities and is awarded CME hours.

Fees and Registration

2000 SR will be charged. Fees will include break refreshments, lunch, all workshop materials and documentation. Registration is on the basis of first come first served, therefore early registration is highly recommended.

Program Schedule

1st Day

Time	Topic
08:00 am-09:00 am	Registration
09:00 am-10:00 am	Introduction to the workshop
10:00 am-10:20 am	Coffee break
10:20 am-11:20 am	An overview of PCR
11:20 am-12:20 pm	Components and Conditions for PCR optimization
12:20 pm-01:00 pm	Lunch time
01:00 pm-02:00 pm	Various methods of DNA extraction
02.00 pm-04.00 pm	**Lab Work**: Isolation of DNA from whole blood

2nd Day

Time	Topic
08:00 am -09:00 am	PCR amplification of DNA fragment
09:00 am-10.00 am	Lab work: PCR and thermal cycling
10:00 am-10:20 am	Coffee break
10:20 am-12.20 pm	Gel electrophoresis to check PCR products
12:20 pm-01:00 pm	Lunch time
01:00 pm-04.00 pm	**Lab work**: UV Trans illumination using gel documentation system followed by result interpretation

3d Day

Time	Topic
08:00 am-10.00 am	Restriction Fragment Length Polymorphism (RFLP) and its applications.
10:00 am-10:20 am	Coffee break
10:20 am-12:20 pm	**Lab work**: Restriction enzyme processing of amplified PCR products
12:20 pm-01:00 pm	Lunch time
01:00 pm-02:00 pm	PCR primer designing
02:00 pm-04:00 pm	Recombinant DNA technology and human genome project

4th Day

Time	Topic
08:00 am-10.00 am	Polyacrylamide gel electrophoresis, UV trans illumination using gel documentation system and interpretation of RFLP products.
10:00 am-10.20 am	Coffee break
10:20 am-12.20 pm	Genotyping and clinical applications
12:20 pm-01:00 pm	Lunch time
01:00 pm-04:00 pm	**Lab work**: Application of RT-PCR

5th Day

Time	Topic
08:00 am-10.00 am	RNA isolation from whole blood
10:00 am-10.20 am	Coffee break
10:20 am-12.20 pm	RT-PCR
12:20 pm-01:00 pm	Lunch time
01:00 pm-04:00 pm	**Lab work**: RT-PCR Gel electrophoresis, UV trans illumination using documentation system and gel interpretation