Application of Clinical Cytogenetics

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 Clinical Cytogenetics'.

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.

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

Cytogenetics is the field of the studying chromosome aberrations, using routine analysis of G-banded chromosomes and other banding techniques, as well as molecular cytogenetic techniques such as fluorescent in situ hybridization (FISH) and comparative genomic hybridization (CGH).

Objectives

- Perform all aspects of culture and analysis of their own or donor's peripheral blood specimen, including culture initiation, harvest, slide preparation, staining, microscope analysis, and karyotype preparation.
- Observe and participate, where appropriate, in specimen processing and evaluation of each specimen type: amniotic fluid, stimulated peripheral blood, bone marrow aspirate and leukemic blood, solid tumor and non-neoplastic tissue specimens.
- Observe and participate in all aspects of chromosomal analysis procedures, including light microscopy analysis and cytovision software computer analysis.

Dates, Location & Duration

The course will be held in the laboratories of 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 until Wednesday.

Documents and Certificates

Participants who successfully complete the theoretical and practical sections 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-09:00am	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	Introduction to human cytogenetics
11:20 am-12:20 pm	Principle of cell culturing and harvesting
12:20 pm-01:00 pm	Lunch time
01:00 p-04:00 pm	Lab work: Sample processing and cell culturing

2nd Day

Time	Topic
08:00 am-9:00 am	Cell division: mitosis and meiosis:
09:00 am-10:00 am	Types of microscopes and their applications
10:00 am-10:20 am	Coffee break
10:20 am-12:20 pm	Chromosomal analysis
12:20 pm-1:00 pm	Lunch time
01:00 pm- 4:00 pm	Lab work: Cell culture harvesting, identification and characterization of normal chromosome under the microscope.

3rd Day

Time	Topic
08:00 am-09:00 am	Numerical chromosomal abnormalities
09:00 am-10:00 am	Structural chromosomal abnormalities
10:00 am-10:20 am	Coffee break
10:20 am-11:20 am	Identification and characterization of the normal karyotype
11:20 am-12:20 pm	Identification and characterization of abnormal chromosomes
12:20 pm-01:00 pm	Lunch time
01:00 pm-04:00 pm	Lab work: Identification and characterization of abnormal chromosomes under the microscope.

4th Day

Time	Topic
8:00 am-09:00 am	Describe banding nomenclature (ISCN)
9:00 am-10:00 am	Cytogenetic result, reporting and interpretation
10:00 am-10:20 am	Coffee break
10:20 am-11:20 am	Microscopic analysis of cytogenetic metaphases (case study)
11:20 am-12:20 pm	Chromosomal identification using computerized image analysis
12:20 pm-01:00 pm	Lunch time
01:00 pm-02:00 pm	Lab work: Cytogenetic slide making and ageing
02:00 pm-04:00 pm	Application of cytovision image analysis

5th Day

Time	Topic
08:00 am-09:00 am	Genetic counseling
09:00 am-10:00 am	Lab work: Cytogenetic- slide staining / banding
10:00 am-10:20 am	Coffee break
10:20 am-12:20 pm	Lab work: Microscopic analysis of metaphases on stained slide
12:20 pm-01:00 pm	Lunch time
01:00 pm-03:00 pm	Lab work: Microscopic analysis using cytovision image analysis
03:00 pm-04:00 pm	Result reporting using cytovision image software