

DATOS GENERALES

Curso acad3mico	Curso 2022/2023
Tipo de curso	Microcredencial Universitario
N3mero de cr3ditos	3,00 Cr3ditos ECTS
Matr3cula	350 euros (importe precio p3blico)
Requisitos de acceso	Those interested in basic and clinical applications of flow cytometry
Modalidad	On-line
Lugar de impartici3n	Online
Horario	Monday-Friday 18.00-20.00 hours

Direcci3n

Organizador

Direcci3n	Jos3 Enrique O'Connor Blasco Catedr3tico/a de Universidad. Departament de Bioqu3mica i Biologia Molecular. Universitat de Val3ncia
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Plazos

Preinscripci3n al curso	Hasta 05/11/2022
Fecha inicio	Noviembre 2022
Fecha fin	Diciembre 2022

M3is informaci3n

Tel3fono	961 603 000
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PROGRAMA

Good Practices in Cytometry

1. FUNDAMENTALS AND APPLICATIONS OF FLOW CYTOMETRY:
 - 1.1 Technical basis of flow cytometry.
 - 1.2 Overview of general applications of flow cytometry.
 - 1.3 Fluorescence and fluorescent markers.
 - 1.4 Components and operation of the flow cytometer: Fluidic System
 - 1.5 Components and operation of the flow cytometer: Optical System
 - 1.6 Components and operation of the flow cytometer: Electronic System
 - 1.7 Generation, Presentation, Storage and Data Management in Flow Cytometry
 - 1.8 Recent technological advances in Flow Cytometry
 - 1.9 Cytometry resources on the Internet.
2. DESIGN AND OPTIMIZATION OF PRE-ANALYTIC EXPERIMENTS:
 - 2.1 Essential issues for experimental design in Flow Cytometry.
 - 2.2 Differential technical characteristics of existing flow cytometers.
 - 2.3 Collection, Storage and Preparation of samples: Clinical cytometry.
 - 2.4 Collection, Storage and Preparation of samples: Basic cytometry.
 - 2.5 Considerations for the selection of reagents for Flow Cytometry
 - 2.6 Internet tools for reagent selection for flow cytometry
 - 2.7 Internet tools for panel design in Flow Cytometry
 - 2.8 Rules for the design and optimization of panels in Flow Cytometry
 - 2.9 Controls in Flow Cytometry
3. DESIGN AND OPTIMIZATION OF EXPERIMENTS-ANALYTICAL PHASE:
 - 3.1 Connecting and disconnecting the cytometer.
 - 3.2 Cleaning and maintenance of the cytometer.
 - 3.3 Standardization and quality control.
 - 3.4 Acquisition of data with the cytometer's software.
 - 3.5 Strategies for population selection (3Gating3).
 - 3.6 Fluorescence compensation.
 - 3.7 Cell separation by flow cytometry ("Cell Sorting")
 - 3.8 Occupational Safety Risks and Procedures in Flow Cytometry.
 - 3.9 Detection of common problems and troubleshooting.

4. ANALYSIS, INTERPRETATION AND DATA MANAGEMENT.

4.1 Specific format of final data in flow cytometry (FCS format).

4.2 Conventional statistical methods in flow cytometry.

4.3 Advanced statistical and bioinformatics methods in flow cytometry.

4.4 Specific statistics for the flow cytometry of rare events.4.5 Modeling methods for cell cycle analysis and proliferation by flow cytometry.

4.6 Ratiometric methods in flow cytometry.

4.7 Quantitative flow cytometry

4.8 Fusion of files in flow cytometry and virtual immunophenotype.

4.9 Introduction to cytometer- interfaced software, third-party software and public domain software.

5. PRACTICAL EXERCISES: RESOLUTION OF REAL CASES

5.1 Guided practical exercises of panel design in Flow Cytometry.

5.2 Instructions and recommendations for the use of cytometers own software, commercial licensed software and public domain software.

5.3 Exercises for analysis of real cases optimized for resolution with cytometers own software, commercial software with use license or public domain software.

PROFESORADO

Alberto Álvarez Barrientos

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OBJETIVOS

Las salidas profesionales que tiene el curso son:

Acquiring experience in Flow Cytometry for basic and clinical applications.

Preparing the ESCCA European Certificate for Cytometry Operators

The general objective of the course is to provide students with specialized knowledge in flow cytometry that will include the correct handling of the instruments, the design and application of cytometric analysis procedures, the acquisition and management of data and the interpretation of results.

METODOLOGÍA

On-line activities of theoretical type (recorded presentations, videos and access to research articles and reviews) and of practical type (remote connection to cytometer simulators and to operating cytometers,

Off-line study of materials and off-line work on real cytometric data files, guided management of cytometry simulators and resolution computer programs of case studies.