Universitat Rovira i Virgili
Fundació URV
Centre de Formació Permanent

Advanced AptaSel - International training on SELEX

Ficha Técnica

Código:
CASELEXEN-A1-2019-2

Título al que da derecho:
Certificado de Aprovechamiento

Dirigido a:
Students and research professionals interested in practical and theoretical aspects of SELEX, from sample preparation to data analysis

Objetivos:
The advanced SELEX course consists of a theoretical part and a practical part, where participants have the opportunity to carry out SELEX under experienced supervision. The course includes a comprehensive overview of different SELEX methodologies, Next Generation Sequencing, truncation studies, characterization of aptamers using binding assays as well as an introduction to aptamer based lateral flow assays.

Fechas:
del 19/06/2019 al 21/06/2019

Horario:
Wednesday to Friday from 9h30-13h30 and 14h30 -17h30

Ubicación:
ETSEQ - DEQ, Av. Països catalans, 26, 43007 Tarragona

Impartición:
presencial

Duración:
21 h

Precio:
850

Coordinación académica:
Ciara O'Sullivan

Docentes:
Ciara O'Sullivan
Marketa Svobodova

Contacto FURV:
Susana Paxton - susana.paxton@fundacio.urv.cat

Más información:
Este curso cumple los requisitos para ser bonificado mediante FUNDAE. Para más información puede dirigirse a: bonificacio@fundacio.urv.cat

Programa

Módulo: Systematic Evolution of Ligands by EXponential Enrichment (SELEX)

Duración: 7 h.

Contenido:

- - Introduction to SELEX
- - Different SELEX strategies
- - Incubation and optimal conditions
- - PCR, PCR optimization of a random library
- - Preparation of single stranded DNA
- - Hands-on lab running SELEX (incubation, PCR, single stranded DNA preparation).

Módulo: Evolution, Next Generation Sequencing (NGS), Truncation studies

Duración: 7 h.

Contenido:

This part covers the monitoring of evolution during SELEX, which allows control and adjustment of the selection pressure and stringency to achieve the desired properties of the selected aptamers. Next Generation Sequencing and data analysis with the interpretation of results and finally determination of secondary structure and truncation studies will be also discussed.

- - Monitoring of evolution during SELEX
- - NGS and data analysis
- - Truncation studies

- Hands-on lab evolution studies (APAA (Apta PCR affinity assay), SPR (Surface Plasmon Resonance), training on analysis of NGS data and truncation studies.

Módulo: Binding assays or Lateral Flow Assays (LFAs)

Duración: 7 h.

Contenido:

Option A) Binding assays

The different binding assays that are routinely used to study the

specificity and affinity of aptamers are described and the suitability for different types of binding assays for various types of targets is described.

- - Different binding assays: SPR, SPRi (Surface Plasmon Resonance imaging), APAA, ELAA (Enzyme Linked aptamer Assay), EMSA (Electrophoretic Mobility Shift Assay, MST (MicroScale thermophoresis) and BLI (BioLayer Interferometry).
- - Suitability of binding assays to specific targets

- Hands-on lab binding assays (SPR, SPRi, APAA, ELAA, EMSA, MST and BLI)

Option B) Lateral Flow Assays (LFAs)

An introductory overview of lateral flow assays is provided, where the essential components of these assays and their importance is explained. Fundamental assay considerations and the implementation of aptamers in different lateral flow assay formats will be described.

- Introduction to aptamer based LFAs

- Hands-on lab competitive/sandwich aptamer based LFAs

Fundación URV. Centro de Formación Permanente
Av Onze de Setembre, 112. 43203 REUS
Tel.: 977 779 950 Fax: 977 310 113
formacio@fundacio.urv.cat

www.fundacio.urv.cat/formacio