

INTRODUCTION

Proteomics is the study of the entire collection of proteins of a biological sample. Besides all the recent progress in this area of research that aims to get a deeper insight into the cellular network, a challenge is still presented due to the wide diversity of proteins, modifications and also interactions that are always involved. Proteomic techniques in conjunction with bioinformatics tools can provide researchers new and powerful tools to unveil these questions and identify new proteins or complexes.

COURSE DESCRIPTION

The course is intended for graduate and post-graduate students who wish to learn about basic proteomics and are willing to gather more information on modern proteomic tools. It is a three day course that includes lectures on advanced proteomics techniques as well as hands-on practical work in the laboratory with the state-of-the-art equipment and methods. The aim of the course is to provide an in-depth evaluation of proteomics experiments by offering laboratory training in sample preparation for protein and peptide separations (1-2 DE electrophoresis, IEF, Protein detection, Western blot methods, DIGE; Image analysis; Trouble shooting), mass spectrometric analyses and subsequent computer-based data analysis and protein interpretation and identification.

PARTICIPANTS

Graduate students and researchers interested in the field of proteomics. No previous experience in 2DE and mass spectrometry is required. Course corresponds to 2,5 ECTS.

REGISTRATION

The registration fee is 250 euros. To register please visit: www.ccmар.ualg.pt

THREE DAY PROTEOMICS COURSE: FROM 2DE TO PROTEIN IDENTIFICATION BY MASS SPECTROMETRY

FOR MORE INFORMATION:
www.ccmар.ualg.pt

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CENTRE OF MARINE SCIENCES

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CCMAR
CENTRE OF MARINE SCIENCES
UNIVERSITY OF ALGARVE

6-8

JULY 2011

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DAY 1

WEDNESDAY, JULY 6

9 AM – 13 PM

[Seminars]

Global approach to proteomics

Eduardo Melo (CBME/UALG)

Proteomics: overview of gel based approaches and applications

Gabriela Almeida (UNL)

2D Gel Troubleshooting

Nadège Richard (CCMAR)

14:30 PM – 18:30 PM

Hands-on practice

Dina Simes, Sofia Cavaco,
and Odete Cordeiro (CCMAR/UALG)

Preparing and quantifying a protein sample

Handling and running of first dimension

DAY 2

THURSDAY, JULY 7

9 AM – 13 PM

Hands-on practice

Dina Simes, Sofia Cavaco,
and Odete Cordeiro (CCMAR/UALG)

Running a 2-D gel electrophoresis

Western-blot analysis

14:30 PM – 15:30 PM

Hands-on practice

Dina Simes, Tomé Silva
and Mahaut de Vareilles (CCMAR/UALG)

Image acquisition of gels

Spot picking

DAY 3

FRIDAY, JULY 8

9 AM – 13 PM

[Seminars]

Principles of MALDI-TOF/TOF MS and protein identification

Ana Varela Coelho (ITQB, UNL)

De novo sequencing by mass spectrometry

Ana Varela Coelho (ITQB, UNL)

Open seminar

Proteomics by Waters (Via Athena)

14:30 PM – 18:30 PM

Protein “in gel” digestion

Ana Varela Coelho (ITQB, UNL)

Mass spectra interpretation and protein identification

Ana Varela Coelho (ITQB, UNL)
and Tomé Silva (CCMAR)

Databases on Proteomics

Tomé Silva and Mahaut de Vareilles (CCMAR)