

ESSENCIAL MOLECULAR BIOLOGY – A HANDS-ON LABORATORY COURSE

12th EDITION

Laboratory of Support to Research in Molecular Medicine
22 Jan - 9 Feb 2018

OPTIONS OF EXPERIMENTAL FOCUS

Name: _____

Please choose up to two of the seven options below. Options can be chosen within the same category. The total number of days is limited to 10.

Genomics:

- ☐ Gene expression studies (G1+G2+G3+G6). Duration: 5 days
- ☐ DNA cloning in E.Coli (G1+G2+G3+G4+G5). Duration: 5 days
- ☐ DNA-protein interaction studies (P1+P2+G7+P3+P4). Duration: 5 days

Proteomics:

- ☐ Tagged protein purification (P1+P2+P6). Duration: 5 days
- ☐ Protein expression studies (P1+P2+P3+P4). Duration: 5 days
- ☐ Protein-protein interaction studies (P7+P3+P4+P1+P2). Duration: 5 days
- ☐ Protein separation by two-dimensional electrophoresis (P1+P2+P5+P3+P4). Duration: 10 days.
(Please note: this option cannot be combined with any other as it takes up the whole 10 days).

Genomics:

G1: Nucleic acids extraction (DNA, RNA) from cells, tissues or fluids;
G2: Quantification techniques and quality control;
G3: cDNA synthesis by reverse transcription (RT);
G4: DNA and cDNA amplification by conventional PCR and real time PCR (qPCR);
G5: Recombinant DNA techniques (enzymatic restriction, transformation, molecular cloning);
G6: Gene expression studies (RT-qPCR);
G7: DNA-protein interaction studies (Electrophoretic Mobility Shift Assay, DNA pull-down essays)

Proteomics:

P1: Protein extraction from cells or tissues;
P2: Quantification techniques;
P3: Electrophoresis (SDS-PAGE);
P4: Western blotting;
P5: Isoelectric focusing;
P6: Purification by liquid chromatography;
P7: Protein co-immunoprecipitation.