



Ministerio de
Ciencia, Tecnología
e Innovación Productiva

Secretaría de Articulación
Científico Tecnológica



ADVANCED COURSE IN *CORRELATIVE LIGHT ELECTRON MICROSCOPY (CLEM)*: THEORETICAL PRINCIPLES AND BIOLOGICAL APPLICATIONS

Date: 14th-19th March 2016

Instituto de Histología y Embriología Mendoza (IHEM-CONICET) Mendoza-Argentina

Description:

This advanced course aims to provide knowledge about super-resolution techniques: STED (Stimulated Emission Depletion Microscopy), STORM (Stochastic Optical Reconstruction Microscopy), SIM (Structured Illumination Microscopy), TIRF (Total Internal Reflection Microscopy), with special focus on CLEM (Correlative Light Electron Microscopy).

We have emphasized on providing theoretical principles and practical experience on the CLEM technique thanks to its capability of combining fluorescence microscopy (FM) with the high resolution of electron microscopy (EM), on a selected region of a fixed or *in vivo* cell. This conceptually simple, but powerful dual approach indeed provides valuable relevant complementary information of biological processes.

The course, which will include theoretical concepts and practical sessions with a final evaluation, is oriented towards biologically trained individuals, particularly graduate students and post-doctoral fellows.

In addition to the advanced course, a workshop in the context of the Associate Membership of Argentina to the EMBL will be held, which will include invited speakers of excellence in the field.

The advanced course and the workshop are supported by a grant from the Systema Nacional de Microscopía, Ministerio de Ciencia y Tecnología (MINCyT).

Venue:

Instituto de Histología y Embriología Mendoza (IHEM-CONICET). Facultad de Ciencias Médicas. Universidad Nacional de Cuyo. Centro Universitario. Parque Gral. San Martín. Mendoza. Argentina.

Organizing Committee

General organizer:

Colombo, María Isabel

Technical responsible:

Ibáñez, Jorge

Co-organizers:

Aguilera, Milton Osmar

Delgui, Laura

Fader, Claudio

Speakers-Collaborators:

Adur, Javier (LAMAE-CONICET. Argentina)

Barrantes, Francisco (UCA. Argentina)

Cáceres, Alfredo (INIMEC-CONICET.UNC. Argentina)

Lafont, Frank (Institut Pasteur. Francia)

López Carrascosa, José (CNB-CSIC. España)

Pepperkok, Rainer (EMBL. Alemania)
Stefani, Fernando (CIBION-CONICET. Argentina)
Aguilera, Milton Osmar (IHEM-CONICET. Argentina)
Colombo, María Isabel (IHEM-CONICET. Argentina)
Delgui, Laura (IHEM-CONICET. Argentina)
Fader, Claudio (IHEM-CONICET. Argentina)
Ibáñez, Jorge (IHEM-CONICET. Argentina)

Technical support

Giménez, Cecilia (IHEM-CONICET. Argentina)
Mansilla, Maria Eugenia (IHEM-CONICET. Argentina)
Domizio, Norberto (IHEM-CONICET. Argentina)
Bocanegra, Elisa (IHEM-CONICET. Argentina)

PRELIMINARY PROGRAM

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9:00 – 9:15	Registration	Lecture (Dr. Pepperkok)	Lecture (Dr. Lafont)	Lecture (Dr. Lafont)	Lecture: (Dr. Carrascosa)	Students Presentations
9:15 – 9:30	Welcome Dr. M.Colombo					
9:30 – 10:30	Welcome MINCYT-EMBL presentation	Lecture (Dr. Cáceres)	Lecture (Dr. Peppercok)	Lecture (Dr. Barrantes)	Lecture: (Dr. Stefani)	
10:30 – 11:00	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break	Final Exam
11:00 – 12:00	Lecture (Dr. Aguilera I)	Lecture (Dr. Adur)	Lecture (Dr. Carrascosa)	Lecture (Dr. Barrantes)	Lecture: (Dr. Stefani)	
12:00 – 13:00	Lecture (Dr. Ibañez I)	Lecture (Ing. Ibañez II)	Students/Teachers discussions	Students/Teachers discussions	Students/Teachers discussions	
13:00 – 14:30	Lunch	Lunch	Lunch	Lunch	Lunch	
14:30 – 15:30	Students/Teachers organization	Students/Teachers discussions	Students/Teachers discussions	Data Analysis	Data Analysis	
15:30 – 17:30	Practical Introduction I (Aguilera-Ibañez) Students groups 1-4	Laboratory work Students groups 1-4	Laboratory work Students groups 1-4	Laboratory work Students groups 1-4	Laboratory work Students groups 1-4	

Practical (laboratory) work:

- Transfection of CHO cells with a cDNA plasmid encoding the EGFP fusion protein of choice.
- Observation of EGFP-labeled structures in living cells.
- Selection of cell of interest with coordinates in MatTek petri dishes.
- Labeling for EM, embedding, and identification of the cell on the resin block.
- Cutting the resin block.
- EM analysis.
- Correlation image FM and EM analysis.

Application:

Interested individuals are invited to apply for admission to this advanced course. Applicants should send a CV, a motivation letter and reference letter from his/her supervisor by e-mail to correlativemicroscopy@mendoza-conicet.gob.ar. The application deadline is February 18th. Attendance will be limited to twenty participants for practical classes. Applicants will be notified of their acceptance by e-mail by the end of February.

Fellowships:

Local expenses (lodging and registration fee) will be covered.

For additional information check the web page
<http://www.mendoza-conicet.gob.ar/portal/ihem/paginas/index/contenidos46>