

Summer school 2024

<b>MONDAY 1/7</b>	
10:00-10:30	<b>Introduction to the course</b> (A. Salvetti)
10:30-11:00	<b>Coffee break</b>
11:00-12:00	<b>Lesson:</b> Introduction to in situ hybridization, RNase free treatment, RNA probe synthesis. (A. Salvetti)
12:00-12:30	<b>Practice:</b> Correct use of basic laboratory equipment (P. Iacopetti; G. Gambino)
12:30-13:30	<b>Lunch</b>
13:30-14:30	<b>Practice:</b> Synthesis of RNA probe I (in vitro transcription) (A. Salvetti, G. Gambino)
14:30-16:30	<b>Lesson:</b> Transmission electron microscopy in life science. Sample preparation for TEM (A. Falleni)
16:30-17:30	<b>Practice:</b> Synthesis of RNA probe II (DNase treatment) (A. Salvetti, G. Gambino)
<b>TUESDAY 2/7</b>	
9:15-10:00	<b>Practice:</b> Sample processing for TEM (fixation I) (A. Falleni; P. Iacopetti, P. Lucchesi)
10:00-11:00	<b>Lesson:</b> Tissue fixation, pre-treatment prior to hybridization, hybridization, immunolocalization of probes, double labelling techniques (A. Salvetti)
11:00-11:20	<b>Coffee break</b>
11:20-12:40	<b>Practice:</b> Sample processing for TEM (fixation II) (A. Falleni; P. Iacopetti, P. Lucchesi)
12:40-14:00	<b>Lunch</b>
14:00-16:30	<b>Practice:</b> Sample processing for TEM (dehydration and infiltration with epoxy resin) (A. Falleni, P. Iacopetti, P. Lucchesi)
16:30-18:00	<b>Practice:</b> Synthesis of RNA probe III (probe precipitation) and electroforetic evaluation of probe (A. Salvetti; G. Gambino)
<b>WEDNESDAY 3/7</b>	
9:00-10:00	<b>Practice:</b> Sample processing for TEM (infiltration with 100% epoxy resin) (A. Falleni; P. Iacopetti, P. Lucchesi)
10:00-11:15	<b>Lesson/practice:</b> The electron beam and image formation in electron microscopy (P. Lucchesi)
11:15-11:40	<b>Coffee break</b>

11:40-13:00	<b>Practice:</b> Sample preparation for TEM (final embedding in epoxy resin) (A. Falleni; P. Iacopetti, P. Lucchesi)
13:00-14:00	<b>Lunch</b>
14:00-16:30	<b>Practice:</b> Fixation of specimens for whole mount in situ hybridization (A.Salveti; G. Gambino)
<b>THURSDAY 4/7</b>	
9:00-11:00	<b>Lesson:</b> Immunolabeling techniques in transmission electron microscopy (P. Lenzi)
11:00-11:30	<b>Coffee break</b>
11:30-13:00	<b>Oral presentation</b>
13:00-14:00	<b>Lunch</b>
14:00-16:30	<b>Oral presentation</b>
16:30	Guided tour of the Anatomy museum "Filippo Civinini" (G. Natale)
<b>FRIDAY 5/7</b>	
9:00-10:45	<b>Practice:</b> whole mount in situ hybridization I (pre-hybridization treatments) (A. Salvetti, G. Gambino)
10:45-11:15	<b>Coffee break</b>
11:15-13:00	<b>Practice:</b> whole mount in situ hybridization I (pre-hybridization treatments) (A. Salvetti, G. Gambino)
13:00-14:00	<b>Lunch</b>
14:00-15:30	<b>Practice:</b> whole mount in situ hybridization I ( hybridization) (A. Salvetti, G. Gambino)
<b>MONDAY 8/7</b>	
9:00-10:00	<b>Lesson:</b> Comet assay, principles and applications (G. Frenzilli)
10:00-11:30	<b>Practice:</b> Preparation of solutions and slides for Comet assay (G. Frenzilli; P. Guidi; M. Palumbo)
11:30-12:00	<b>Coffee break</b>
12:00-13:00	<b>Practice:</b> Whole mount in situ hybridization II (post-hybridization washes and immunodetection probes) (A. Salvetti; G. Gambino)
13:00-14:30	<b>Lunch</b>

14:30-17:30	<b>Practice/Lesson:</b> Trimming of the epoxy resin blocks, cut of semithin sections with the ultramicrotome equipped with a glass knife (A. Falleni; P. Lucchesi)
<b>TUESDAY 9/7</b>	
9:00-10:00	<b>Practice:</b> Whole mount in situ hybridization III (colorimetric reaction) (A. Salvetti; G. Gambino)
10:00-10:30	<b>Coffee break</b>
10:30-12:30	<b>Practice:</b> Comet assay with human blood samples (G. Frenzilli; P. Guidi; M. Palumbo)
12:30-14:00	<b>Lunch</b>
14:00-17:00	<b>Practice:</b> Diffusion assay. Slide preparation and scoring (G. Frenzilli; P. Guidi; M. Palumbo)
<b>WEDNESDAY 10/7</b>	
9:00-10:30	<b>Lesson/Practice:</b> Cut of ultrathin sections with the ultramicrotome equipped with a diamond knife and section collection on copper grids. Staining of ultrathin sections (A. Falleni; P. Lucchesi)
10:30-10:50	<b>Coffee break</b>
10:50-13:00	Practice: Cut of ultrathin sections with the ultramicrotome equipped with a diamond knife and section collection on copper grids. Staining of ultrathin sections (A. Falleni; P. Lucchesi)
13:00-14:00	<b>Lunch</b>
14:00-16:30	<b>Practice:</b> Electrophoresis for Comet assay (G. Frenzilli; P. Guidi; M. Palumbo)
<b>THURSDAY 11/7</b>	
9:00-11:00	<b>Practice:</b> Microscope scoring of Comet assay (G. Frenzilli; P. Guidi; M. Palumbo)
11:00-11:15	<b>Coffee break</b>
11:15-12:30	<b>Lesson/Practice:</b> Sample observation at transmission electron microscope (A. Falleni, P. Lucchesi) and ImageJ Fuji software introduction (G. Gambino)
12:30-14:00	<b>Lunch</b>
14:30-16:00	<b>Lesson/Practice:</b> Sample observation at transmission electron microscope (A. Falleni, P. Lucchesi) and ImageJ Fuji software introduction (G. Gambino)
<b>FRIDAY 12/7</b>	

9:00-10:00	<b>Lesson:</b> Micronucleus test and cytome assay, principles and applications (G. Frenzilli)
10:00-10:30	<b>Coffee break</b>
10:30-12:00	<b>Lesson/practice:</b> Micronucleus test and cytome assay, principles and applications (G. Frenzilli; P. Guidi; M. Palumbo)
12:00-13:00	<b>Lunch</b>
13:00-14:30	<b>Practice:</b> Analysis of in situ hybridization experiments (A. Salvetti; G. Gambino)
<b>SATURDAY 13/7</b>	
9:00-10:00	<b>Final evaluation test</b>
10:00-11:00	<b>Record of credits</b>