

	Monday, 22 nd August	Tuesday, 23 rd August	Wednesday, 24 th August	Thursday, 25 th August	Friday, 26 th August	Saturday, 27 th August
9	Registration and Opening					
9.30	Lecture: "Intracellular pathogens: an introductory view" (Dr. Berón)	Lecture: "Pseudomonas aeruginosa, an opportunistic pathogen" (Dr. Kierbel)	Symposium preparation and Laboratory work preparation (students alone): S1-Group A: <i>Coxiella</i> S1-Group B: <i>Pseudomonas</i> TP-Group C: <i>Serratia</i>	Lecture: "Autophagy and intracellular pathogens" (Dr. Colombo)	Lecture: "Autophagy: mechanistic insights into autophagy against bacteria" (Dr. Yoshimori)	Laboratory work: TP- Group A: Chlamydial inclusion development (Dr. Damiani Instructor: Capmany) TP-Group B: <i>Coxiella</i> (Dr. Berón Instructor: Campoy)
10.30	Lecture: "Mechanisms of internalization of pathogenic bacteria" (Dr. Kierbel)	Lecture: "Subversion of macrophage function by the Q fever bacterium, <i>Coxiella burnetii</i> " (Dr. Heinzen)	TP-Group D: <i>T. cruzi</i>	Lecture: "Autophagy: molecular machinery and membrane biogenesis" (Dr. Yoshimori)	Lecture: "Ubiquilins in autophagy and other ubiquitin-dependent processes". (Dr. Brown)	Symposium presentation: S1-Group C: <i>Streptococcus</i> (Dr. Yoshimori)
11.30	Coffee break	Poster presentation and coffee break	Poster presentation and coffee break	Poster presentation and coffee break	Poster presentation and coffee break	Coffee break
12	Lecture: "New genetic tools for <i>Coxiella</i> and its rescue from host cells" (Dr. Heinzen)	Lecture: "Invasion and survival of <i>Serratia marcescens</i> into non-phagocytic cells" (Dr. Véscovi)	Lecture: "Regulatory mechanisms in bacterial pathogens" (Dr. Véscovi)	Lecture: "The intracellular lifestyle of <i>M. marinum</i> ". (Dr. Brown)	Lecture: " <i>Mycobacterium</i> / <i>S. aureus</i> and autophagy at the cross road" (Dr. Colombo)	Symposium presentation: S1-Group D: <i>Mycobacterium</i> (Dr. Brown)
13	Lunch	Lunch	Lunch	Lunch	Lunch	
14.30 - 17.30	Symposium preparation under speaker's supervision: S1-Group A: <i>Coxiella</i> (Dr. Heinzen) S1-Group B: <i>Pseudomonas</i> (Dr. Kierbel)	Symposium preparation under speaker's supervision: S1-Group A: <i>Coxiella</i> (Dr. Heinzen) S1-Group B: <i>Pseudomonas</i> (Dr. Kierbel)	14.30 h- Symposium presentation: S1-Group A: <i>Coxiella</i> (Dr. Heinzen) Symposium presentation: 15.30 h- S1-Group B: <i>Pseudomonas</i> (Dr. Kierbel)	Symposium preparation under speaker's supervision: S1-Group C: <i>Streptococcus</i> . (Dr. Yoshimori) S1-Group D: <i>Mycobacterium</i> (Dr. Brown)	Symposium preparation under speaker's supervision: S1-Group C: <i>Streptococcus</i> (Dr. Yoshimori) S1-Group D: <i>Mycobacterium</i> (Dr. Brown)	

14.30 -	Laboratory work:	Laboratory work:	17-19 h	Laboratory work:	Laboratory work:	
17.30	TP-Group C: <i>Serratia marcescens</i> (Dr. Véscovi, Instructor: Campoy) TP Group D: "Lifecycle of <i>T. cruzi</i> " (Dr. Romano, Instructor: Vanrell)	TP-Group C: <i>Serratia marcescens</i> (Dr. Véscovi, Instructor: Campoy) TP Group D: "Lifecycle of <i>T. cruzi</i> " (Dr. Romano, Instructor: Vanrell)	Laboratory work: Groups A, B, C and D	TP- Group A: Chlamydial inclusion development (Dr. Damiani Instructor: Capmany) TP-Group B: Coxiella (Dr. Berón Instructor: Campoy)	TP- Group A: Chlamydial inclusion development (Dr. Damiani Instructor: Capmany) TP-Group B: Coxiella (Dr. Berón Instructor: Campoy)	

	Monday, 29 th August	Tuesday, 30 th August	Wednesday, 31 th August	Thursday, 1 st September	Friday, 2 nd September	Saturday, 3 rd September
9.30	Lecture: "Molecular bases of <i>Shigella</i> invasion of intestinal cells" (Dr. Sansonetti)	Lecture: "The anti-immunity strategy of <i>Shigella</i> ." (Dr. Sansonetti)	Symposium preparation and Laboratory work preparation (students alone): Groups A and B	Lecture: <i>Trypanosoma cruzi</i> cellular invasion by trypomastigotes and membrane repair: convergence of two pathways. (Dr. Mortara)	Lecture: <i>HeLa</i> cell invasion by <i>Trypanosoma cruzi</i> amastigotes: an exquisite case of phagocytosis? (Dr. Mortara)	Symposium presentation: S2-Group C: <i>Trypanosoma</i> (Dr Mortara)
10.30	Lecture: "Intracellular intruders: the <i>Chlamydia</i> 's case" (Dr. Damiani)	Lecture: "The <i>Chlamydia</i> protease CPAF is a central regulator of bacterial and host proteins important in virulence". (Dr. Valdivia)	Lecture: "Searching molecular targets for new drugs in trypanosomatids" (Dr. Sosa)	Lecture: "Modulation of dendritic cell function during <i>Trypanosoma cruzi</i> infection" (Dr. Alba-Soto)	Lecture: " <i>Trypanosoma cruzi</i> and the host cell autophagic pathway" (Dr. Romano)	Symposium presentation: S2-Group D: <i>Leishmania</i> (Dr. Veras)
11.30	Poster presentation and coffee break	Poster presentation and coffee break	Poster presentation and coffee break	Poster presentation and coffee break	Coffee break	Coffee break
12	Lecture: "Convergence of functional genomics and proteomic approaches to tackle the genetically "intractable" <i>Chlamydiae</i> ." (Dr. Valdivia)	Lecture: "Autophagy in <i>Trypanosoma cruzi</i> " (Dr. Cazzulo)	Lecture: "Mechanisms of <i>Leishmania</i> -host cell interaction" (Dr. Veras)	Presentation of Laboratory works : Group C and D	12:00-13:00 Symposium preparation under speaker's supervision: S2-Group C: <i>T. cruzi</i> and host cells (Dr. Mortara) S2-Group D: <i>Leishmania</i> (Dr. Veras)	Final evaluation
13	Lunch	Lunch	Lunch	Lunch	Lunch	
14.30 - 17.30	Symposium preparation under speaker's supervision: S2-Group A: <i>Shigella</i> (Dr. Sansonetti) S2-Group B: <i>Chlamydia</i> (Dr. Valdivia)	Symposium preparation under speaker's supervision: S2-Group A: <i>Shigella</i> (Dr. Sansonetti) S2-Group B: <i>Chlamydia</i> (Dr. Valdivia)	Symposium presentation: 14.30 h S2-Group A: <i>Shigella</i> (Dr. Sansonetti) 15.30 h S2-Group B: <i>Chlamydia</i> (Dr. Valdivia)	Symposium preparation under speaker's supervision: S2-Group C: <i>T. cruzi</i> and host cells (Dr. Mortara) S2-Group D: <i>Leishmania</i> (Dr. Veras)	14:30-17:30 Symposium preparation under speaker's supervision: S2-Group C: <i>T. cruzi</i> and host cells (Dr. Mortara) S2-Group D: <i>Leishmania</i> (Dr. Veras)	

14.30 - 17.30	Laboratory work: TP-Group D: <i>T. cruzi</i> (Dr. Romano, Instructor: Vanrell) TP-Group C: Toxins and Autophagy (Dr. Fader Instructor: Mestre)	Laboratory work: TP-Group D: <i>T. cruzi</i> (Dr. Romano, Instructor: Vanrell) TP-Group C: Toxins and Autophagy (Dr. Fader Instructor: Mestre)	17-19 h Laboratory work: Groups A and B	Laboratory work: Groups A and B	16:30-17:30 Presentation of Laboratory works : Group A and B
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Lectures: 45 min for presentation and 10 min for discussion

Poster presentation:

The students will prepare a poster (in English) showing their current research (90 cm width and 120 cm length). The students will have 10 min for explaining the posters.

Symposia:

Group A: 1st Week: *Coxiella* (supervisor: Dr. Heinzen)

2nd Week: *Shigella* (supervisor: Dr. Sansonetti),

Group B: 1st Week: *Pseudomonas* (supervisor: Dr. Kierbel),

2nd Week *Chlamydia* (supervisor: Dr. Valdivia)

Group C: 1st Week: *Streptococcus* (supervisor: Dr. Yoshimori),

2nd Week *Trypanosoma* (supervisor: Dr. Mortara)

Group D: 1st Week: *Mycobacterium* (supervisor: Dr. Brown),

2nd Week *Leishmania* (supervisor: Dr. Veras)

Symposium presentation: The students will prepare a Symposium based on papers, reviews or material given by the supervisor. The supervisor will be the expert on the field. The material will be selected by the supervisor and send to the students at least a week before the course. The students have to read the material before the initiation of the course. Groups: five post-graduated students each. Symposium presentations will be 40 min plus 10 min for discussion.

Laboratory work:

Group A: Chlamydial inclusion biogenesis and development. Recruitment of host cell proteins such as GTPases Rab to chlamydial inclusion membrane. Colocalization studies. Confocal microscopy imaging.

Group B: Study the relationship among *Coxiella burnetii*, endocytic and autophagic trafficking. The colocalization of endocytic and autophagic markers with the *Coxiella burnetii* parasitophorous vacuole will be analyzed.

Group C: Toxins and autophagy. The goal of this experimental procedure is to study the cellular response to a pore forming toxin secreted by *Staphylococcus aureus* called α -hemolysin. GFP-LC3 transfected cells will be incubated with the toxin under different experimental conditions and analyzed by confocal microscopy. Interaction between *Serratia marcescens* and the autophagic pathway. Cells overexpressing GFP-LC3 will be infected and indirect immunofluorescence will be used to specifically detect the bacteria. The interaction between the microorganism and the autophagic marker will be evaluated by confocal microscopy.

Group D: Lifecycle of *T. cruzi*. The aim of this experimental procedure is to study the effect of autophagy modulating compounds on *T. cruzi* differentiation process. *In vitro* metacyclogenesis of *T. cruzi* epimastigotes from Y-GFP strain. Visualization of epimastigotes and trypomastigotes by fluorescence microscopy. Invasion experiments using Vero cells.

Laboratory work presentation: The practical work will be supervised by a lecturer/instructor. Groups: five post-graduated students each. Presentations: 15 min plus 5 min for discussion.