

Postgraduate course: in-person

Interaction between the host and enteropathogenic *Escherichia coli*: study models

Dates: 9-10 June, 2025

Coordinators: Marina Palermo, Cristina Ibarra, María Marta Amaral and Analía Trevani

About the course:

This course will provide an overview of the different pathogenic mechanisms of *Escherichia coli* and explore the main aspects of host immune mechanisms involved in the defense against these pathogens. It will provide an overview of distinct in vitro and in vivo models for studying the virulence mechanisms of enteropathogenic *Escherichia coli*.

Modality

Theoretical modules: in-person.

Practical modules: in-person.

Target Audience:

This course is aimed at master's, doctoral, and postdoctoral students from various disciplines, including Biological Sciences, Medical Sciences, Veterinary Medicine, Biotechnology, and related fields.

Program

Theoretical part (June 9, 2025) – ESIB auditorium

9:00-9:40. Human microbiota: Composition, function and impact on human health.
Mauricio Farfán.

9:50-10:30. Main pathogenicity mechanisms of diarrheagenic *Escherichia coli* pathotypes: Enterotoxigenic *E. coli* (EPEC), Shiga toxin-producing *E. coli* (STEC), Enteropathogenic *E. coli* (EPEC), Enteroaggregative *E. coli*, Enteroinvasive *E. coli* (EIEC). **Fernando Navarro García.**

10:40-11:00. Coffee break

11:00-11:40. Intestinal pathophysiology: Diarrhea-generating mechanisms. **Roxana Toriano.**

11:50-12:30. Overview of innate and adaptive immune mechanisms. **Analía Trevani.**

12:30-14:00. Lunchtime

14:00-14:40. The mucosal immune response. **Carolina Jancic.**

14:50-15:30. Animal models for studying intestinal infections. **Marina Palermo.**

15:30-16:00. Coffee break

16:00-16:40. Renal pathophysiology associated with bacterial toxins. **Claudia Silberstein.**

16:50-17:30. Shiga toxin-associated endothelial damage: Relevance of the immune response and hemostasis. **María Marta Amaral.**

Practical part (June 10, 2025) – Microbiology Museum Laboratory

9:00-17:00.

Station 1: Methodologies for the study of gastrointestinal infections. Mouse intragastric inoculation model. **Romina Fernández Brando. Leticia Bentancor. Marina Palermo.**

Station 2: Cellular models for the study of intestinal infections. **Analía Trevani. Carolina Jancic. Florencia Sabbione.**

Station 3: Cellular models for the study of renal pathology. Methodology for the study of nephrotoxicity. **María Marta Amaral. Claudia Silberstein. Flavia Sacerdoti. Roxana Toriano.**

Station 4: Methodologies for the study of cerebral toxicity. **Jorge Goldstein. Leticia Bentancor.**

Teaching staff

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