

Faculty of Medicine



SBIM1303 Workshop on experimental strategy in cellular and molecular biology

[60h] 6 credits

This course is not taught in 2005-2006

Language: French

Level: First cycle

Aims

To integrate fundamental knowledges in biochemistry, cell biology, cell physiology, molecular biology and genetics; To define a scientific question, to translate it in terms of experimental strategy and propose experimental protocols including appropriate controls; To interpret the results, discuss their relevance and compare them to data taken from the litterature; To finally propose some perspectives.

Main themes

Some experimental strategies, based on a well-defined system, and that gave rise to major breakthroughs in cellular and molecular biology are exposed and discussed. The key experiments will be detailed. Students (in small groups) further elaborate experimental strategies for specific problems:

- first, the teacher proposes selected problems in the field of molecular and cellular biology and provides the students with useful informations to elaborate an experimental strategy;
- the students propose experimental models and approaches that need to be validated by the teacher;
- these experimental approaches are tested and the results obtained are analysed and discussed in the light of published work.
- finally, the students present the result of their work to their colleagues and teachers.

Content and teaching methods

This workshop is devoted to train students to work together on scientific projects.

- it learns how to define precisely a scientific question and to collect the appropriate informations;
- it leads to elaborate and the validate a logical (and chronological) experimental program;
- it forms to the critical discussion of experimental results and to their presentation to other students and teachers.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisite : basic knowledges in biochemistry, cell biology, cell physiology, molecular biology and genetics. This course can be completed by methodological courses (e.g. SBIM2111 : Méthodologie de biologie cellulaire et moléculaire), and other courses of cell biology (e.g. BICL3245 : Questions spéciales de biologie cellulaire) and molecular biology (e.g. DBCM3001 : Tutorat en biologie moléculaire).

Assessment : the elaboration of the experimental approach, the analysis of the results and their critical discussion are evaluated.