

## Faculty of Medicine



## FARM1229 Molecular genetics and drugs

[22.5h+7.5h exercises] 3 credits

**Teacher(s):** Etienne De Plaen, Jean-Noël Octave (coord.)  
**Language:** French  
**Level:** First cycle

**Aims**

The objectives are to learn the approaches of molecular biology, which allow the analysis of DNA and RNA to develop both diagnostic tools as well as cellular and animal models needed in biomedical and pharmaceutical sciences.

**Main themes**

Cloning and expression in prokaryotic and eukaryotic cells. Genetic engineering and production of proteins that are useful in biomedical and pharmaceutical sciences. Utilization of DNA polymorphisms as diagnostic tools. Transgenic animals. DNA modifications in hereditary diseases. Gene therapy.

**Content and teaching methods**

Description and utilization of different cloning and expression vectors in prokaryotic cells. Construction and screening of genomic DNA libraries. Analysis of the DNA molecule : Detection of different polymorphisms. Construction and screening of cDNA libraries. Cloning and expression of cDNA in different cell types. Overexpression and knock out of genes in transgenic animals. Examples of gene therapy.

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

Assessment: By written exam.

Support: Notes and Power Point presentations provided by the lecturers.