SBIM1302 Molecular Virology

[15h] 2 credits

This course is taught in the 1st semester

Teacher(s): Thomas Michiels
Language: French
Level: First cycle

Aims

The lectures present basic concepts on structure and function of animal viruses. It outlines the relationship between the basic replication cycle of the virus and the outcome of the infection for the host. It aims at giving the student the ability to use basic knowledge of viral life cycles as a tool to understand the techniques that are used to detect viruses, develop antiviral compounds.

Main themes

General structure, replication cycles, and classification of viruses; antiviral agents and vaccination; Reverse genetics and use of viruses as vectors. Selected viruses will be taken as exemples to illustrate the diversity of host-virus interactions and the outcome thereof (latency, cellular transformation, oncogenesis, antigenic variation and escape of immune responses, AIDS...).

Content and teaching methods

Historics of viruses discovery, characterization and classification.
Structure and replication cycle of animal viruses (DNA viruses, RNA viruses and retroviruses).
Host-virus interaction (cellular transformation, latency, antigenic variation, cancer, oncogenes, AIDS). Vaccination and antiviral agents.
Reverse genetics and use of viruses.
Non-conventional agents.

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

Prerequisite: basic biochemistry, molecular and cellular biology: nature and function of nucleic acids and proteins; gene expression, protein synthesis, modification and targeting in eucaryotic cells; organization and function of the eucaryotic cell.
Assessment: By written (or oral) exam. The students will be examined on their knowledge of the subject, and on their capacity to use this knowledge to solve problems

Other credits in programs

SBIM13BA	Troisième année de bachelier en sciences biomédicales	(2 credits)	Mandatory