



BIOL2138 Integrated seminar in molecular genetics

[45h] 3.5 credits

This course is taught in the 2nd semester

Teacher(s): Jean Delcour
Language: French
Level: Second cycle

Aims

The study of modifications made to the genome and genes under the effect of mutation, recombination and transposition.

Main themes

1. Mutations: spontaneous mutations (during replication, tautomerisation), UV damage, chemical mutagenesis. 2. Repairing : excision-ligation, correction of mismatch, SOS system. 3. Homologue recombination: models of homologue recombination (heteroduplex), postmeiotic segregation, genic conversion, repairing recombination, site-specific recombination. 4. Transposition: IS and Tn bacterias, P elements (Drosophile), control elements (plants). 5. Retrotransposition: retrovirus (animals, man), TY elements, retrogens. Assisted work: practical work consists of cloning the gene of α -amylase of *Bacillus licheniformis* in a phagemide and to build a battery of deletants to sequence by the methods of Sanger. The technics practiced are the following: restriction, ligation, transformation, phenotypic selection, rapid plasmide preparation, electrophoresis on agarose gel, cartography. During spare moments, we discuss the multiple problems encountered during the manipulations.

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

Prerequisites: Molecular genetics (BIOL2137) and microbiology (BIOL2131).

Support: photocopies of articles and course notes, experimental protocols.

Other credits in programs

BIOL21/A	Première licence en sciences biologiques (Biologie moléculaire, cellulaire et humaine)	Mandatory
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