CNRS Formation Entreprise
2017 Nov 9-10 th

Ref 17288: In vivo CRISPR/Cas9 genome editing

This training aims to provide a general framework to get scientists started using CRISPR/Cas9 for in vivo gene editing in rodents. The main topics are: i) Learn more about gene editing and how it works, ii) Summarize current advances on many technical aspects, iii) Optimize the RNA guide design to the genotyping analysis (bioinformatics workshop), iii) Discuss your own scientific project.

Agenda

Thursday, November 9th, 2017

Welcome
8:00-8:20 (IGBMC reception) Point meeting
E. BEDU

8:20-8:30 (Room 3013) Welcome-Introduction
MC. BIRLING
G. PAVLOVIC

Lectures

8:30-10:30 (Room 3013): Introduction and applications of in vivo CRISPR-Cas9 genome editing in rodents

- Principles of CRISPR/Cas9 genome editing
- What mouse or rat model could be achieved though in vivo genome editing?
- In vivo genome editing achievement using mouse and rat models
- PRO and CONS of the CRISPR/Cas9 technology. Comparison with gene targeting by homologous recombination in ES cells.
- Future challenges (gene therapy, new nucleases,...)

G. PAVLOVIC
10:30-10:45 **Break**

10:45-12:45 **(Room 3013): Case study**

- Practical illustrations using *in vivo* CRISPR-Cas9 genome editing in house results and bibliographic analysis

  MC. BIRLING

12:45-14:15 **(Room 3013): Lunch - K’torze restaurant**

14:15-16:15 **(Room 3013): WORKSHOP; Design of CRISPR/Cas9 genome editing experiment**

Selection of the target sequence and the guide RNAs (gRNA) - Validation of gRNAs- Genotyping method- Advised web resources- Practical session on computer.

  Part 1

  MC. BIRLING

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**Friday, November 10th, 2017**

09:00-11:00 **(Room 3013): WORKSHOP; Design of CRISPR/Cas9 genome editing experiment**

Selection of the target sequence and the guide RNAs (gRNA) - Validation of gRNAs- Genotyping method- Advised web resources- Practical session on computer.

  Part 2

  MC. BIRLING

11:00- 12:00 **(Room 3013): Interactive Discussion Groups**

This session consists of open questions and will allow each attendee to consider their own scientific issues.

  MC. BIRLING
  G. PAVLOVIC

12:00-13:00 **(Room 3013): Lunch-debrief (lunch boxes)**

  MC. BIRLING
  G. PAVLOVIC
  E. BEDU