



Genomics Core Facility, Universitat Pompeu Fabra (Barcelona)

***Targeted resequencing for cancer studies.
The solid tumor gene panel***

Barcelona, 21-23 January 2015

This course will cover practical and theoretical aspects of targeted resequencing using a gene panel with fixed content, including primers targeting 26 genes involved in colon, lung, ovarian, gastric cancer and melanoma. The course is designed to be of interest to laboratories considering the use of next-generation sequencing technologies for molecular screening of cancer.

The goal of the course is to teach the fundamentals of NGS library preparation and validation using the Illumina TruSeq DNA library preparation kit. We will start with an introduction to Illumina Next Generation Sequencing technology and the library preparation workflow. The main part will be the preparation of libraries from FFPE genomic DNA, with a focus on the critical steps and potential pitfalls of the protocol. Finally we will quantify and quality control the prepared libraries, before discussing solutions for targeted resequencing data analysis.

Each participating laboratory will provide up to eight samples, ideally including Tumor/Blood DNA samples. Quality control will determine the four samples from each laboratory that will be analyzed in the course.

This course is organized in collaboration with Illumina.



- Number of participants: eight, from four different laboratories. One member per lab will directly participate in the hands-on lab activities. Accepted laboratories should send the samples for quality control before January 16th.
- Who should apply: This course is directed towards biologists, scientists and technicians who want to get familiar with targeted resequencing and learn the basics of library preparation. It is desirable that the participants have basic molecular biology skills.
- Requirements: It is desirable that the participants bring their own laptops which will be used for data analysis.
- Tuition: The registration fee is of 450 Euros per participant, and covers sample quality control and all reagents for library preparation and sequencing. Coffee breaks and lunches at the PRBB are also included. Lodging costs are not included in the registration fee. If needed, we can help participants to find economic accommodation in Barcelona.
- The course will take place at the Genomics Core Facility of the Universitat Pompeu Fabra in Barcelona, located at the Barcelona Biomedical Research Park (PRBB).
- Pre-registration: Please send an email to genomica@upf.edu (specify “**Targeted Resequencing** Course” at the email subject), indicating the two people who would attend the course and a brief description of your samples. Accepted participants will receive the instructions for the payment.

Please contact genomica@upf.edu for further information.



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PROGRAM

First day, January 21st

8.30 – 9.00.

Registration & Welcome ([Ferran Casals & Svetlana Nikic/Chiara dal Fiume](#))

9.00 – 9.30

Presentation. Next-Generation Sequencing technologies ([Svetlana Nikic](#))

9.30 – 10.00

Presentation. Introduction to library preparation ([Chiara dal Fiume](#))

10.30 – 11.00

Coffee break

11.00 – 13.00

Laboratory. Library preparation: Sample quality control & quantification with qPCR ([Chiara dal Fiume / Ester Castillo](#))

13.00 – 14.30

Lunch at the PRBB cafeteria.

14.30 – 17.00

Laboratory. QC results discussion and start of trusight library prep ([Chiara dal Fiume/Ester Castillo](#))



Second day, January 22nd

9.00 – 14.00

Laboratory. Trusight library prep: library QC and quantification ([Chiara dal Fiume](#))
Coffee break during 45 min incubation
Laboratory. Start of Miseq run ([Chiara dal Fiume](#))

14.00 – 15.30

Lunch at the PRBB cafeteria.

15.30 – 16.00

Laboratory. Run monitoring ([Chiara dal Fiume](#))

16.00 – 17.00

Laboratory. Data analysis File formats and run folder structure. Q/A ([Chiara dal Fiume](#))

Third day, January 23nd.

9.00 – 10.30

Variant Studio with demo samples ([Chiara dal Fiume](#))

10.30 – 11.00

Coffee break

11.00 – 13.00

Presentation. QC run data and troubleshooting ([Chiara dal Fiume](#))

13.00 – 14.30

Lunch at the PRBB cafeteria.

14.30 – 16.00

Open discussion and workflow step by step revision ([Chiara dal Fiume](#))