Next Generation Sequencing downstream analysis

Course description:

This course covers topics regarding the analysis of Next Generation Sequencing (NGS) experiments after preprocessing and QC of the raw sequencing data e.g., to count matrices (RNA-Seq) and peaks (ChIP-Seq). We will introduce NGS and the typical experimental designs of NGS experiments (e.g., RNA-Seq and ChIP-Seq experiments). We will cover the statistical tests and measures that are used for NGS experiments (e.g., adjusted p-values, FDR). In the practical part we will show you how to get an overview of the results of a differential analysis (e.g., with VENN diagrams, Heatmaps, PCA, MA plots, and Volcano plots) and how to generate biological insight from a Covid-19 dataset (e.g., Gene set enrichment analyses) using freely available web tools.

Topics:

- Fundamentals of Next Generation Sequencing (NGS) and experimental designs of NGS experiments
- Statistical tests and measures used for NGS experiments
- Visualization of NGS results
- Gene Set Enrichment Analysis (GSEA)

Methods:

Presentations, Hands-on sessions and exercises, Q&A sessions

Format:

- Mode: online course on Teams
- Duration: 1 days
- Language: English
- Participants: max. 12 persons

Requirements:

Basic knowledge on usage of spreadsheet programs (e.g., MS Excel, LibreOffice Calc).

Dates and Application:

You can view the current dates and register for this course on CaMS.