

Overview

The Genomic Unit staff have 15 years of experience in Next Generation Sequencing technologies and bring this know-how to support your research projects. We use state of the art technology platforms and provide comprehensive support for many applications including RNA-seq, DNA-seq, ChIP-seq, WGS, WES, gene panels as well as Single Cell profiling and Single Molecule sequencing experiments. We provide support for clinical trials, including the SAGITTARIUS study funded by the European Union's Horizon Europe program.

Services

The unit provides professional support for the different phases of a research project, from the optimisation of the experimental design to the functional interpretation of the results obtained. This includes identification of the ideal methodological approach to achieve the experimental objective, quality control of nucleic acids, generation of indexed fragment libraries, sequencing and analysis of results for selected applications. We are available to customize protocols for specific needs. Sequencing results are delivered via the web, using a platform with an intuitive interface and password-protected access.

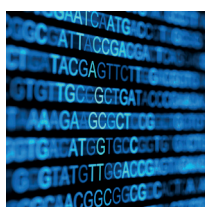
Innovation

Our understanding of how the genome works is advancing rapidly, thanks in part to the constant developments of NGS-based analysis methods. Keeping pace with technological advances requires constant commitment. We are constantly implementing new approaches to keep our expertise up to date and make it available to the scientific community. We offer single molecule sequencing (Oxford Nanopore Technologies) and single cell applications on Chromium X instruments (10X Genomics).

Quality

The Genomics Unit boasts over a decade of expertise in genomic technologies, beginning in 2008 with the acquisition of an Illumina Genome Analyzer II sequencer. Over the years, the Unit has expanded its capabilities, incorporating certified diagnostic platforms such as the MiSeqDx and NextSeq550Dx, which are currently operational. Additionally, the Unit benefits from access to a NextSeq2000 and a NovaSeq6000 system based at the Catania site. We perform quality controls throughout the entire workflow and implement GLP (Good Laboratory Practice) standards. Our protocols and operating procedures are regularly updated to ensure the highest levels of efficiency and performance. We actively collaborate as operational partners in Clinical Trials. Cogentech is an ISO 9001:2015 certified company.

NEXT GENERATION SEQUENCING



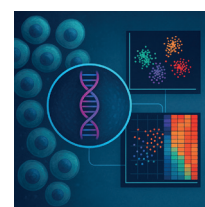
totalRNA sequencing, mRNA sequencing, ChIP sequencing, SmallRNA sequencing, 16S-Metagenomic sequencing, WGS (Whole Genome sequencing), WES (Whole-Exome sequencing), Low pass WGS, Targeted sequencing, Custom applications (ChIA-PET, ATAC-seq.), Genome-wide Methylation Profiling

OXFORD NANOPORE TECHNOLOGIES



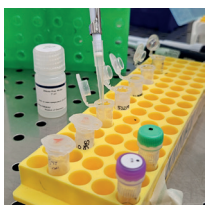
Small Genomes sequencing, RNA and cDNA sequencing, Amplicons Panels/targeted sequencing, Plasmid sequencing, Microbiome sequencing

SINGLE CELL OMICS



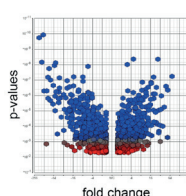
Gene expression (GEX), Chromatin accessibility (ATAC), Immune profiling (TCR/BCR), CRISPR screening, Multi-Omics (GEX + TCR/BCR), Split-pool combinatorial barcoding protocols

NUCLEIC ACID EXTRACTION



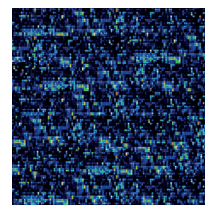
Nucleic acid extraction (Promega Maxwell CSC, manual)
cfDNA extraction (Promega Maxwell CSC, manual)
Quantity and Quality control (Qubit and TapeStation)

DATA ANALYSIS



NGS data analysis available for selected applications (ChIPSeq and RNASeq, DNaseSeq, LowPass WGS, ONT applications, inquire for details) including QC, filtering, alignment to reference, identification of DEGs/peaks, annotation, visualization

AFFYMETRIX® MICROARRAY



Genotyping, CNV or Molecular karyotyping
Gene expression profiling from totalRNA, mRNA, miRNA