The ELIXIR-Greece Galaxy server including best practices tools and workflows for the analysis of SARS-CoV-2 data

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Galaxy-ELIXIR webinar series: FAIR data and Open Infrastructures to tackle the COVID-19 pandemic

30 April 2020 - 28 May 2020

- Session 1: Introduction to Galaxy and the Galaxy workflows for SARS-CoV-2 data analysis

- Session 2: Genomics/Variant Calling

- Session 3: Cheminformatics: Screening of the main protease

- Session 4: Evolution of the Virus

- Session 5: Behind the scenes: Global Open Infrastructures at work

https://elixir-europe.org/events/webinar-galaxy-elixir-covid19
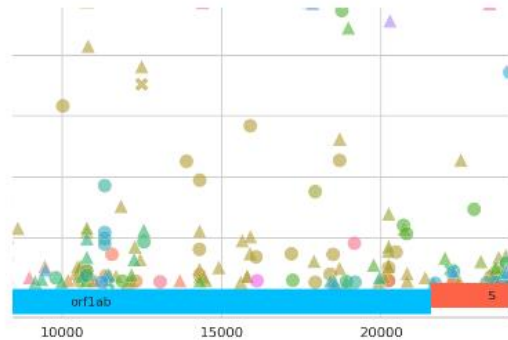Video + Slides available

Best practices for the analysis of SARS-CoV-2 data

- The goal of this resource is to provide publicly accessible infrastructure and workflows for SARS-CoV-2 data analyses (https://covid19.galaxyproject.org/)
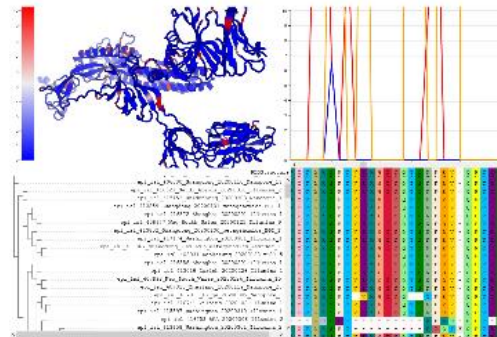
Three types of analyses

Genomics
Assembly and intra-host variation

- Assembly
- MRCA timing
- Variation analysis
- Selection and recombination

Evolution
Sites under selection

- Natural Selection Analysis
- Analysis
- Visualizations
- Observable Notebooks

Cheminformatics
Screening of the main protease

- Compound enumeration
- Generation of 3D conformations
- Docking
- Scoring
- Selection of compounds for synthesis

Additional types of analyses

Proteomics

Mass Spectrometry
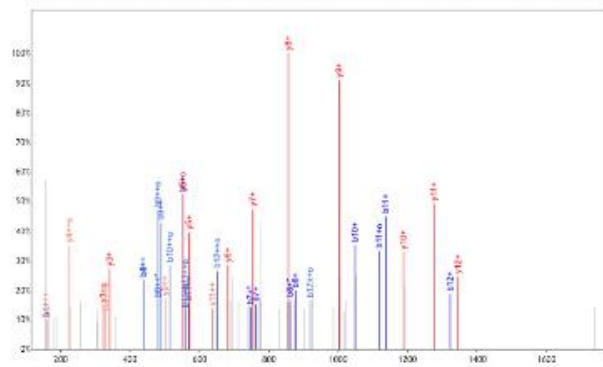
- Reanalysis of PXD018804
- Reanalysis of PXD018682
- Reanalysis of PXD018117
- Metaproteomics of mPXD019423
- Metaproteomics of mPXD019119

Artic

Amplicon based data analysis

direct RNA-seq

direct RNA-seq data analysis
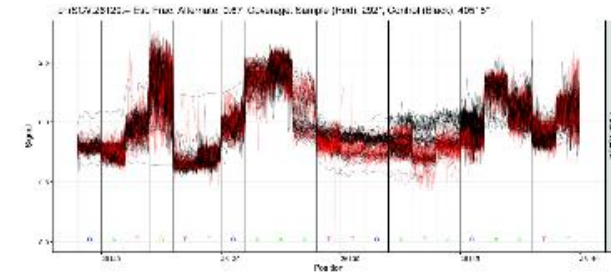
- Pre-Processing
- RNA Epigenetics

Workflows

Workflow design

Workflow execution

ELIXIR Greece Galaxy instance

EG-CI

https://usegalaxy.elixir-greece.org/

- Small cluster of 3 (VM) nodes
  - 48 CPUs
  - 192 GB RAM
  - 3 TB of storage (no quota yet)
- Connected over a private network
- Common filesystem (nfs)
- Slurm Workload Manager

Depending on user needs, more resources (CPU, RAM, storage) and tools can be installed

Available to *everyone*

https://usegalaxy.elixir-greece.org

Usage Stats

Galaxy Reports

Reports

Jobs
- Today's jobs
- Jobs per day this month
- Jobs in error per day this month
- All unfinished jobs
- Jobs per month
- Jobs in error per month
- Jobs per user
- Jobs per tool
- Errors per tool

Histories
- Histories and Datasets per User
- States of Datasets per History

Tools
- States of Jobs per Tool
- Execution Time per Tool

Workflows
- Runs per Workflows
- Workflows per month
- Workflows per user

Users
- Registered users
- Date of last login

Jobs Per Month

« 1 »

Click Month to view details. Graph goes from the 1st to the last of the month.

Max items: 10

Month ↑	User and Monitor Jobs
September 2020	23
July 2020	106
June 2020	47
April 2020	33

Thank you for your attention!

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