



ELIXIR against COVID-19

Mobilising national efforts

Since early in 2020, all ELIXIR institutes, across **22 members states** and **EMBL-EBI**, have joined forces to provide a broad range of services for studying the SARS-CoV-2 and COVID-19.

At a national and international level, ELIXIR experts have offered publications, databases, workflows, software and computing resources that have empowered researchers across Europe to advance their research.

Take a look at some of the national responses

For more, visit

ELIXIR Members ●

Germany

Prioritised access to the de.NBI Cloud computing facility for COVID-19 research projects and further support with the European Galaxy server.

Established a national task force for COVID-19 human omics data management.

Denmark

Created tracking dashboards to support COVID-19 efforts.

Collaborated with national agencies to prepare against infectious diseases.

Dedicated parts of the national HPC Infrastructure to COVID-19-related projects.

Created a COVID-19 view of Bio.tools with an efficient model to populate and update entries.

Estonia

Developed data collection services and modelling tools for hospitals to track the spread of COVID-19.

Supported [National COVID-19 monitoring study](#) with data management and analytics.

Implemented Galaxy workflows and providing compute capacity for analysing local SARS-CoV-2 sequences along with [Estonian Scientific Computing Infrastructure](#).

Belgium

Developed [a tool](#), alongside a simple demo, to facilitate the submission of SARS-CoV-2 sequencing data to the European Nucleotide Archive.

Helped develop the [WorkflowHub](#) and integrate workflows to analyse SARS-CoV-2 data.

Supported the establishment of the COVID-19 national coordination team.

Luxembourg

Led the development and hosting of the [COVID-19 Disease Map](#), a knowledge repository of the molecular mechanisms of COVID-19.

Provided data management, analysis and IT infrastructures to support the national research platform for COVID-19 and national cohort studies.

Spain

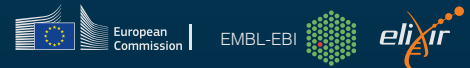
Created the [COVID-19 Viral Beacon](#), a platform for browsing SARS-CoV-2 variability at the genome, amino acid, structural and motif level.

Developed the [3DBionotes-COVID19](#) tool that brings together structural and functional information on the SARS-CoV-2 proteome.



COVID-19 Data Portal

Maximising data re-use for pandemic preparedness and response

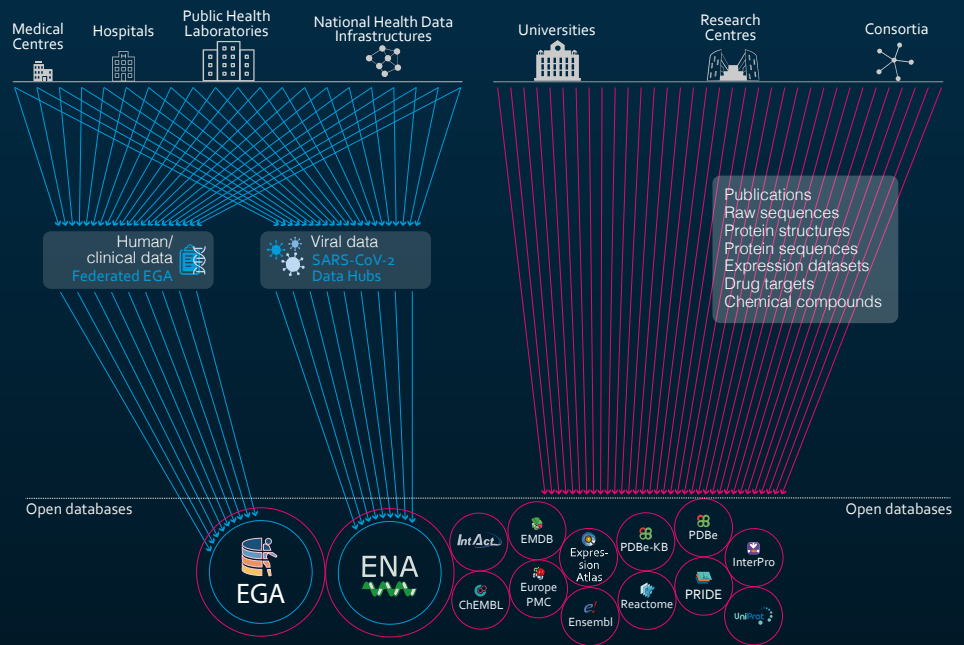


Finding the needle in the haystack

In a matter of months, the world has generated vast amounts of COVID-19 research and patient data. This effort is futile if the data are not deposited, shared, analysed and contrasted.

Open data provide the underlying basis for understanding SARS-CoV-2 transmission and developing treatments, preventive measures and public health policies.

Collectively, this knowledge translates into saving lives, but an overarching umbrella that connects all sources is required to achieve maximum impact.

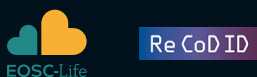
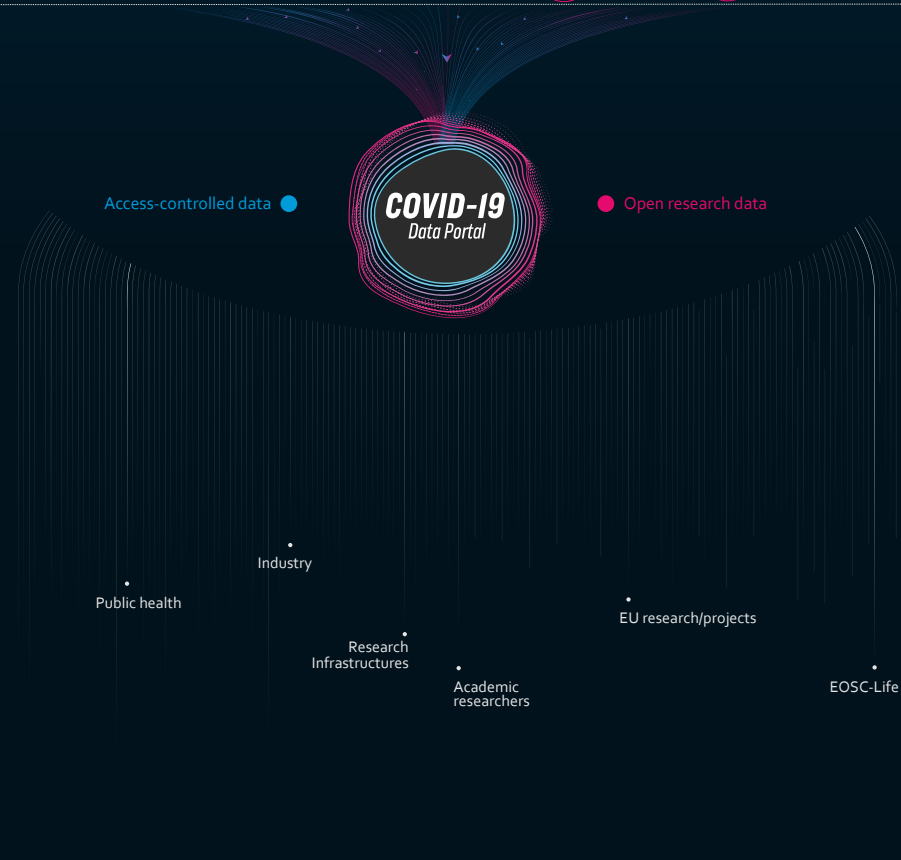


A one-stop-shop to connect all resources

The [COVID-19 Data Portal](#) is one of the three major components of the European COVID-19 Data Platform, a cornerstone of the ERAvsCORONA Action Plan.

While granting access to open research data, the Portal also enables the integration of research data with access-controlled patient data.

The Platform was rapidly launched in April 2020 — in less than two months — thanks to pre-existing infrastructure, the coordination from EMBL-EBI and ELIXIR, and the European Commission’s support through several Horizon 2020 grants:



“ Launching the European COVID-19 Data Platform is an important concrete measure for stronger cooperation in fighting the coronavirus.

— Mariya Gabriel
European Commissioner

A visual journey of some of ELIXIR resources

COVID-19 Data Platform: 6 months in review

In only six months, the COVID-19 Data Platform became a new model for scientific collaboration. Experts had to come together to quickly make valuable data available to those working towards stopping SARS-CoV-2 in its tracks.

FAIR principles in the COVID-19 Data Portal

At one of our main virtual events this 2021, Guy Cochrane (EMBL-EBI) helped us understand the importance of FAIR principles when sharing COVID-19 research data. With him, we dived into the COVID-19 Data Portal to understand how FAIR has been ingrained in every process.

Vitamin D, immunity and COVID-19

Led by our colleagues in ELIXIR Luxembourg, the COVID-19 Disease Map is an open-access tool to discover COVID-19 disease pathways. At one of our webinars, Martin Hewison, from the University of Birmingham, reviews how the resource has helped unveil some of the relationships between vitamin D, immunity and COVID-19.

COVID-19 Viral Beacon

Developed by our ELIXIR colleagues in Barcelona at the Center for Genomic Regulation (CRG), the COVID-19 Viral Beacon helps fill in the gaps in the SARS-CoV-2 ocean of data. It provides scientists with the means for an in-depth analysis of raw and consensus COVID-19 data from several datasets: European Nucleotide Archive (ENA), Oxford Nanopore, Illumina, NCBI/SRA and GISAID.

Enabling fast submission of SARS-CoV-2 data

Experts from ELIXIR Belgium developed a tool for rapid submission of SARS-CoV-2 sequences data to the European Nucleotide Archive (ENA). They created a video to demonstrate how to use the new tool and give guidance to remove human reads from the viral data so that no sensitive information is shared.