



CRG Guidelines for Open Science on COVID-19 research

Table of Contents

1.1	Background	4
1.2	Scope	4
1.3	Guidelines	4
1.4	Relevant resources	5

1.1 Background

Over the past weeks, we have witnessed an unprecedented global effort to share knowledge and data related to COVID-19, openly and transparently. This momentum will certainly contribute to empower scientists to come up with innovative timely solutions to attenuate the burden of this pandemic on society.

The CRG is also contributing by getting involved in several initiatives and research projects to fight the global COVID-19 pandemic.

1.2 Scope

The CRG encourages Open Science practices related to research projects focusing on COVID-19.

1.3 Guidelines

While ensuring the protection of Intellectual Property when necessary (upon consultation with the TBDO department), the CRG encourages Open Science practices related to research projects focusing on COVID-19. More specifically, we encourage:

- **Open Access to publications:** publications on COVID-19 research should immediately be made public, available and re-usable. More than 30 leading publishers have committed to making all of their COVID-19 and coronavirus-related publications, and the available data supporting them, immediately accessible in PubMed Central (PMC) and other public repositories. List of journals: <https://wellcome.ac.uk/press-release/publishers-make-coronavirus-covid-19-content-freely-available-and-reusable>.
In addition, we encourage publishing articles as pre-prints in BioRxiv, medRxiv or similar platforms, before peer-review.
In case you need guidance, please contact the CRG's documentalist: thomas.guegan@crg.eu.
- **FAIR and Open Data:** research data should be publicly available. When possible, researchers should deposit their data in available public databases that ensure long-term storage and access (e.g. ELIXIR Pathogen Portal, or EGA for personally identifiable genetic and phenotypic data) or alternatively in publicly accessible servers. The CRG Bioinformatics facility offers overall support, and specifically the service, called "Data upload in public repositories", through AGENDO.
- **Open Code and Software:** the code should be released, well documented and freely accessible. We encourage the use of version control systems like Git and the release of the code on public servers such as GitHub and BitBucket or, alternatively to share the code using platforms such as GitLab. We also encourage the use of continuous integration solutions for the purpose of automated testing. Finally for handling reproducibility issues we recommend the use of Linux containers (Docker or Singularity) combined with workflow management systems like Nextflow and Snakemake.
- **Science communication:** results from COVID-19 projects should be shared with society with the support of the CRG communication department (contact person: omar.jamshed@crg.eu).

1.4 Relevant resources

Relevant resources:

- **H2020 guidelines for open science on COVID-19 related projects:** the European Commission has recently released updated guidelines on open access to publications, open data and other research outputs from COVID-19 related projects.
https://ec.europa.eu/research/participants/data/ref/h2020/other/hi/oa-pilot/h2020-guidelines-oa-covid-19_en.pdf
- **EC COVID-19 Data Portal:** EMBL-EBI and partners have set up the COVID-19 Data Portal to bring together relevant datasets submitted to EMBL-EBI and other major centres for biomedical data. The aim is to facilitate data sharing and analysis, and to accelerate coronavirus research.
<https://www.covid19dataportal.org/>
- **EOSC-LIFE response to COVID-19:** a list of grants, tools and resources that are made available from different European infrastructures to facilitate clinical and fundamental research on COVID-19.
<https://www.eosc-life.eu/resources/ls-ri-response-to-covid-19/>
- **ELIXIR data support for COVID-19:** bioinformatics services run by ELIXIR Nodes to assist researchers working on SARS-CoV-2. <https://elixir-europe.org/news/covid-19-support>
- **EU-OPENSSCREEN** rapid testing of binders/inhibitors (5.000 molecules) to viral proteins: fast access to their pilot library for COVID-19 related research activities.
<https://www.eu-openscreen.eu/covid-19/eu-openscreen-eric.html>
- **Crowdfight COVID-19:** an initiative from the scientific community to put all available resources at the service of the fight against COVID-19. Researchers working on COVID-19 can request help with tasks, and other scientists can help fulfil those requests by donating time and skill for free.
<https://crowdfightcovid19.org/>
- **COVID-19 host genetics initiative:** an initiative that brings together the human genetics community to generate, share, and analyze data to learn the genetic determinants of COVID-19 susceptibility, severity, and outcomes. <https://www.covid19hg.org/about/>