

Research Infrastructures and COVID-19 Research



ACCELERATE is funded by the European Union Framework Programme for Research and Innovation Horizon 2020, under grant agreement 731112



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Responses to the questionnaire

European Spallation Source ERIC

The European Spallation Source (ESS) is a European Research Infrastructure Consortium (ERIC), a multi-disciplinary research facility based on the world's most powerful neutron source. Our vision is to build and operate the world's most powerful neutron source, enabling scientific breakthroughs in research related to materials, energy, health and the environment, and addressing some of the most important societal challenges of our time.

SERVICE/S IMPLEMENTED

The ESS Deuteration and Macromolecular Support Lab, DEMAX, is already functioning on a small scale and we can provide expertise, advice, and limited materials to support research to address the critical need of finding ways to understand and shut down COVID-19 virus.

What stage in COVID-19 intervention your RI is addressing?

DEMAX will prioritise requests for the production of deuterated proteins, DNA, and some types of small molecules such as detergents and lipids that are all potentially useful for neutron scattering studies of viral components. As an enveloped virus, the membrane of Covid-19 is composed of lipid membranes derived from the host cell. We can make deuterated eukaryotic lipids derived from yeast that could be used to study viral-host cell interactions and maybe even viral assembly interactions with proteins.

Instruments/databases involved:

DEMAX

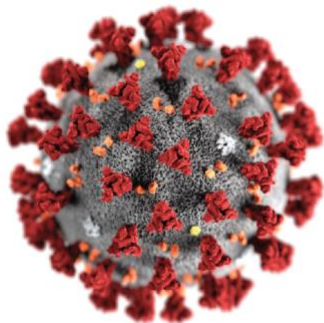
How is the proposal submitted?

By email to the ESS user office. Please see <https://europeanspallationsource.se/article/2020/03/27/ess-demax-lab-prioritise-proposals-covid-19-related-research> for further information.

Who evaluates the proposal?

The proposal will be reviewed by the facility and will be prioritized at the Science Director's discretion. Proposal success will be subject to capacity at DEMAX.

Is the submission continuous, or linked to a deadline?



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Submission and review of COVID-19 related proposals is continuous. Please note that ESS will review this position at the end of 2020.

▪ What is the estimated time from the submission to the access / service provision?

This is very dependent on the complexity of producing the deuterated molecules required, with production often taking more than a month. However, these requests will be prioritised over the on-going work at DEMAX.

CHARACTERISTICS OF THE ACCESS

Restrictions: No. However, it is intended that deuterated samples are produced for neutron experiments.

In the case of analytical facilities, modality of access allowed: Remote access only

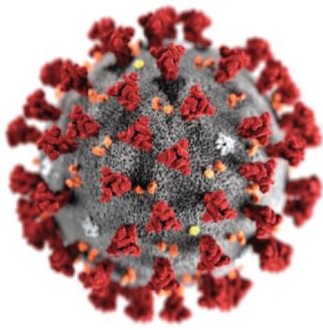
Comment for remote access only: DEMAX is a specialist lab where staff carry out the production of deuterated proteins, DNA, and some types of small molecules such as detergents and lipids. This does not require the user to be present. It may require the user to provide plasmid DNA for protein production and the DNA template for DNA production for example.

If on-site access is allowed, is mobility support available?	NO
Is the access free for non-proprietary research?	YES
Is commercial access available at reduced prices?	YES
Are there limitations regarding the type of samples?	YES
Are there special requirements for shipment of the samples?	YES
Are there specific requirements regarding the preparation or handling of the samples?	YES

Additional comments related to the questions above: All biological labs are rated as containment level 1 labs. As the nature of the samples shipped to DEMAX varies significantly, please discuss preparation of your sample and shipping requirements with your DEMAX contact *before* shipping anything, to ensure that it arrives in a useful format.

ACCESSIBILITY OF THE PUBLICATION AND DATA

Is there any requirement to publish in open access journals?	YES
Is the data generated associated to metadata and is it publicly available?	YES
If yes, what is the embargo period?	3 years



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Where is the data or metadata published? (e.g. in the institution's catalogue, in other open data repositories, etc).	The institution catalogue
Do you have further comments about data or metadata?	In the case of DEMAX, each delivered molecule has a data sheet with associated DOI.