

Subject header: Commissioning call for the chameleon/Talos

We are pleased to announce a commissioning call for researchers to access the chameleon cryo-EM freezing device (application) developed commercially by SPT Labtech. This forms part of a collaboration between Diamond, the Rosalind Franklin Institute and SPT Labtech with the view to providing a platform for beta-testing of the chameleon by the wider user community that will aid further commercialisation of the system by SPT Labtech.

The chameleon uses piezo electric inkjet dispensing technology to apply nanolitre volumes of protein solution to self-wicking cryo-EM grids.

Please select the [Rapid access](#) route and the Talos instrument when you submit your proposal and also add that this is specifically for use with the chameleon.

Proposals are also open to existing BAG PIs.

Proposals will be reviewed by eBIC staff with a view to schedule beamtime from December/January.

Requirements

The chameleon has been shown to help with preferred orientation and denaturation problems that are routinely found when freezing cryo-EM grids. As such we are particularly interested in freezing proteins with a known preferred orientation or denaturation problem.

With this in mind we would ideally like to see both raw cryo-EM images and 2D class averages in the proposal. However we will also consider scientific value and likelihood of success. The chameleon is very efficient in terms of protein quantities required for freezing, however, similar to other spraying devices it does require the protein to be at a higher concentration than for traditional freezing approaches. Though it is unlikely to all be consumed, we would recommend sending at least 2 x 20 ul tubes of concentrated protein and separate buffer for dilution if needed.

Visit structure

Due to COVID-19 restrictions user visits will be remote access.

The visit will be 2 days. The first morning will be spent freezing on the chameleon and the afternoon on the eBIC Talos microscope to assess sample concentration and general grid quality. Data from day one will allow further optimisation and freezing of additional samples on day two. After the visit the user will be required to provide feedback in the form of information on grid quality including example images of the atlases, grid squares, holes and of course details of gains or otherwise compared to conventional methods.

Follow up information, including details of publications must also be provided. This will help develop protocols and improve workflows for future visits and provide feedback on the performance of the chameleon.

Kind regards,

eBIC and RFI Teams

For inquires please contact daniel.clare@diamond.ac.uk