

Access to the Bio21 Collaborative Crystallisation Centre Rigaku Proteros Free Mounting System.

The Bio21 Collaborative Crystallisation Centre has generously agreed to make its Rigaku Proteros Free Mounting System (FMS) available for use at the Australian Synchrotron. This device allows users to control the level of hydration of protein crystals in a precise fashion with the aim of improving diffraction resolution.

Access to this device will initially be in the following fashion:

A. Laboratory use

Users are welcome to use this device in the preparation laboratory associated with the PX beamlines. No formal proposal through the AS portal is necessary – instead users should contact beamline staff directly to book such laboratory time. At least one week's notice will be required and users will also need to submit documentation regarding samples for safety approval. Beamline staff will be available to assist users with device familiarization. Users will be able to dehydrate crystals in a controlled fashion using the FMS and then store these crystals frozen for subsequent examination on one of the beamlines. Beam time for this purpose will need to be requested through one of the standard proposal mechanisms.

B. Beamline use

Users are welcome to use the device directly on either of the beamlines, but such requests will need to be incorporated within a Project Proposal, a Rapid Access Proposal or a beamtime request within a Program Proposal. Requests will be judged on merit by the PX Proposal Advisory Committee (PX PAC) and it will be expected that justification will be made as to why the FMS cannot be used solely in the manner described in (A) above. It should be noted that there is some down time associated with the installation of the FMS on the beam line and the PAC will need to be convinced that such down time is justified in terms of the proposed experiment.

In order to avoid loss of beamtime due to instrument familiarization time, users intending to use the FMS on a PX beamline will need to undergo hands-on training in the PX laboratory BEFORE the using the FMS on the beamline itself. Such training should be arranged with beamline staff well in advance of the scheduled beam line. At least one user in the team of experimenters will need to have had such training.

Additional information:

Bio21 Collaborative Crystallization Centre: <http://www.csiro.au/c3>

Rigaku Proteros FMS: <http://www.rigaku.com/protein/fms.html>

Original publication: R. Kiefersauer, M. E. Than, H. Dobbek, L. Gremer, M. Melero, S. Strobl, J. M. Dias, T. Soulimane and R. Huber. (2000). A novel free-mounting system for protein crystals: transformation and improvement of diffraction power by accurately controlled humidity changes. *J. Appl. Cryst.* **33**, 1223-1230.