



Crystallization Facility

The Crystallization Facility is primarily available to structural biologists at UCLA, though we also make our services available to external users as well. We provide a high-throughput approach to protein crystallization, using state of the art methods and equipment.

New User Guide

The Crystallization Facility offers a variety of services related to protein crystallization:

- Consultation, guidance, and technical assistance on macromolecular crystal growth
- Commercial screening kits using hanging (3 drops) or sitting drop methods
- Fine grid optimization of conditions from initial hits
- Vapor diffusion and nanoscale free interface diffusion (FID) available
- Detection of protein vs. salt crystals using UV/visible light microscope

Sample Preparation Requirements

There are some basic requirements that the user is responsible for in order to effectively crystallize your sample. Sample purity should be >98% as detected by SDS gel and/or Mass Spectroscopy. The optimal protein concentration can vary, but typically is around 10mg/ml. Centrifugation of the sample shortly before screens are made is recommended.

Facility Fees

The facility runs at-cost, meaning the fees we charge are to recover the cost of chemicals, consumables, and service contracts for the various robots we use. For UCLA users we charge \$35/tray and \$38/optimization. External users are charged slightly more due to storage and time spent analyzing trays. All users must submit a signed billing form prior to using the facility (form available online).

Commercial Kit Screens

We currently offer 19 commercial crystallization screen kits from Emerald Biosystems, Hampton Research, and Qiagen. For initial screening we typically advise 8 trays (2304 conditions) to maximize the likelihood of obtaining hits, while avoiding overlapping conditions and keeping the cost down.

Optimization Screens

From initial hits we are able to design a fine grid of conditions to optimize crystal growth. Together with the user we discuss what parameters to vary, and utilize OptiCrys to calculate the amount of each reagent per well. The user typically supplies all chemicals needed to make the optimization tray.

Checklist For Users

- Email mcollazo@mbi.ucla.edu for an appointment
- Prepare 40ul of protein per tray
- Get billing form signed by PI (see website below to download)
- List any special instructions about the protein/preparation (i.e. RNA, temperature, etc)

<http://www.doe-mpi.ucla.edu/facilities/crystallization>