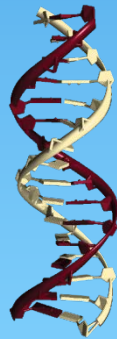




Florida State University



imb

Institute of Molecular Biophysics

IMB Macromolecular X-Ray
Diffraction Core Facility

Why You Need a X-Ray Facility?

- * You have a new protein, nucleic acid, lipid, or a complex of these macromolecules
- * You have biochemical and biophysical data
- * But no structural information is available
- * Have few milligrams of pure molecule(s)
- * X-Ray Facility can provide the 3-D structure
- * Three-dimensional structure will provide info on
 - * Mechanism of action (enzyme)
 - * Association details (structural)
 - * Binding details (macromolecule-drug)

Crystal Screening and Optimization

Macromolecular Crystallization

- * Crystallization screening
- * Automated nanoliter crystal robot
- * Crystal optimization
- * Crystal imaging and analysis
- * Variable temperature chambers
- * Cryo crystal storage and transport

Diffraction Screening and Optimization

Home X-Ray Source

- * Copper rotating anode generator ($\lambda=1.541\text{\AA}$)
- * Cryo Stream Cooler (100°K)
- * R-Axis IV⁺⁺ image plate detector
- * marCCD 165 detector
- * Automated data collection and processing
- * Ambient and cryo crystallography

Data Collection, Analysis, and Structure Solution

Synchrotron X-Ray Source

- * SER-CAT | APS BL 22 | ID and BM lines
- * Brightest X-Ray source in the US
- * Dedicated proposal-free beam time
- * FedEx shipment and robotic sample handling
- * Remote data collection and processing
- * Data analysis and 3-D modeling

FSU IMB X-RAY CRYSTALLOGRAPHY FACILITY

X-Ray Crystallography Facility
biophysics.fsu.edu/facilities/x-ray-facility



Crystal Screening



Home X-Ray
Source



Synchrotron
X-Rays

X-Ray Crystallography Facility
850-644-6448 | tsomasundaram@fsu.edu

The x-ray crystallography facility provides the instrument and expertise for screening macromolecular crystallization conditions and optimization.

We can collect x-ray diffraction data from macromolecular single crystals both using home and synchrotron sources.

We can solve the 3-D structure of your interest that will provide mechanistic and binding details of your macromolecule.

- Protein Crystal Screening & Optimization
- Diffraction Screening & Optimization
- Data Collection at home & synchrotron
- Data Processing, Analysis & Modeling
- Complete 3-D Structure Solution