

Advancing Structure-Based Drug Design: IMCA-CAT Responds to Emerging Needs of the Pharmaceutical Industry

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For over 20 years, the Industrial Macromolecular Crystallography Association Collaborative Access Team (IMCA-CAT) has focused exclusively on accelerating drug discovery and development by delivering synchrotron-based diffraction data. Rapid turnaround of high quality and low-cost structural data is essential in ensuring success in structure-based drug design and an increasing number of computer-aided drug design projects. Today, IMCA-CAT operates a state-of-the-art MX beamline; operating continuously with fully unattended data collection for overnight means that >90% of samples are turned around within one day. IMCA-CAT can handle crystals in a variety of pins and pucks, the data are automatically processed and then rapidly delivered to researchers in a secure, encrypted, and reliable software framework. In addition to MX data collection, IMCA-CAT serves as the conduit for SAXS data collection and structure-based consultancy services. On the horizon are modes of access to Hauptman-Woodward Medical Research Institute's centers for high-throughput crystallization screening, cryo-EM structure determination, and microcrystal electron diffraction. IMCA-CAT is the one-stop shop for all the services that the next generation pharmaceutical structural biologist will need. Opportunities abound for researchers in all pharmaceutical and biotechnology organizations to access IMCA-CAT for structural services.