

## **A High-efficiency, Low-cost Platform for Structural Genomics Studies at Peking University**

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A high-throughput, high-efficiency and low-cost platform based on Beckman-Coulter robotic system Biomek FX for structural genomics has been set up. Several projects of structural genomics are in processing. Now, the platform has a capacity to process more than 1000 genes/year for structural and functional analyses. *B. Subtilis*, a model organism for Gram-positive bacteria and *S. Mutans*, the primary pathogen of dental caries were selected as our main target sources. So far, more than 450 *B. subtilis* and 250 *S. mutans* proteins and some proteins from other sources were selected as targets for this platform, the selected targets are mainly related to important metabolism pathways, and/or of potential for drug design. Up to 2005 Jan., 20 protein structures from the selected targets were determined, among them, eight structures were determined ab-initio. The application of beamline at **BSRF** (Beijing Synchrotron Radiation Facilities) and the **OASIS-2004** program have been crucial components for the operation of our platform. The use of SAD (single-wavelength anomalous diffraction) phasing methods combined with direct methods in **OASIS-2004** has increased the efficiency significantly, 5 out of 8 ab-initio determined structures have been solved this way.

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