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Five Structures in 23 Hours at SER-CAT Determined by SAS and an Optimizing High Throughput Structure Determination Procedure. James Z.J. Liu, Lirong Chen, Weihong Zhou, Doowon Lee, Dawei Lin, Wolfram Tempel, John Rose, B.C. Wang, Southeast Collaboratory for Structural Genomics, Dept. of Biochemistry and Molecular Biology, Univ. of Georgia, Athens, GA 30602 USA.

The Southeast Collaborative for Structural Genomics (SECSG) has developed a high throughput structure determination procedure capable of providing fitted structures at the unprecedented pace of approximately 3 hours per structure. This procedure includes: (1) data collection on prescreened crystals at SER-CAT (Southeast Regional Collaborative Access Team), Advanced Photon Source, (2) processing the data on-site, (3) phasing the data via the web by SCA2Structure, an optimizing structure determination pipeline located at the University of Georgia and (4) examination of the results on-site by the researchers performing the data collection and structure determination at APS.

During a recent 24-hour visit, SECSG researchers were able to produce 5 structures from SAS data using this procedure. The average total time for data collection and structure determination was 191 minutes. The structures solved represented an average mix of structural genomics targets with molecular weights ranging from 12-25 kDa. Details of the high-throughput procedure and the experiments will be presented.

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