

**E0044**

**Protein Crystallization Optimization Techniques and Cryoprotectant Selection at Ontario Center for Structural Proteomics.** X. Xu, T. Skarina, E. Evdokimova, M. Kudritska, J. Gu, H. Zheng, O. Kagan, O. Onoprienko, O. Egorova, A.M. Edwards, A. Savchenko, University Health Network, Univ. of Toronto, Ontario M5G 1L6, Canada.

The Ontario Centre for Structural Proteomics is a Canadian Institute that is affiliated with both the Northeast Structure Genomics Consortium and the Midwest Centre for Structural Genomics. Since 1998, we have contributed more than 200 diffracted crystals of structural genomics targets.

The quality of the crystal is the key for the structure determination. Production of well-diffracting crystals is still a bottleneck in this process. We will present a refined complex approach to optimize protein crystals for diffraction including microcrystal seeding, temperature variation and small molecule co-crystallization.

Cryocrystallography has become an essential and routine tool in structural biology over the last decade as a result of observation of great reduction in radiation damage to protein crystals during X-ray diffraction experiments at cryotemperatures. The most critical step in this process is selection of suitable cryoprotectant, which is usually done empirically. We will present our method for cryoprotectant selection based on extensive experience gained during Structural Genomics program.