

**W0067**

**Development of the Cryoprotectant Database for Protein Crystallization Experiments and its Statistics.**

Sachiko Takahashi,<sup>1</sup> Takashi Yoshimine,<sup>1</sup> Masaru Sato,<sup>2</sup> Hiroaki Tanaka,<sup>1</sup> Kensaku Hamada,<sup>3</sup> Susumu Yoshitomi<sup>2</sup>,  
<sup>1</sup>Japan Space Utilization Promotion Center, Tokyo 169-8624, Japan, <sup>2</sup>Japan Aerospace Exploration Agency, Ibaraki 305-8505, Japan, <sup>3</sup>PharmAcess, Inc., Hyogo 678-1205, Japan.

Freezing protein crystals reduces radiation-induced damages caused by the strong X-ray beam radiated by the synchrotron facility. Therefore, it is very important to choose appropriate conditions of freezing protein crystal for better data collection.

We have constructed the cryoprotectant database (<http://idb.exst.jaxa.jp/>) which includes 576 cryoprotectant data mainly extracted from *Acta Crystallographica D* 2000, 2001 and 2002, available both in English and Japanese. The information was the name of the protein, origin, PDB reference, precipitant, crystallization method, cryoprotectant, freezing method and freezing temperature. We will continue to update (100 more data this year) and analyze these data sequentially.

According to the statistic analysis of the database, glycerol was the most frequently used cryoprotectant and PEG was the second. If PEG was exclusively used as a cryoprotectant, there might not be strong but some correlation between the molecular weight and the concentration of PEG. Since PEG could also be a precipitant, it will be useful if no additional cryoprotectant is necessary when PEG is a precipitant.