Experiment title:

Experiment number: MX-1140

Beamline: ID29

Date of experiment: 04/02/2011 from: 9h30 to: 8h00

Date of report: 08/02/2011

Shifts: 3

Local contact(s): Dr David VON STETTEN

Received at ESRF: Agata Nawrotek* (CNRS, P6 University; PhD student), Benoît Gigant* (CNRS; PhD), Samira ZOuhir (PhD student, Université Paris-sud 11), Rosa Grenha (Post-doc) and Sylvie Nessler (Prof. Université Paris-sud 11).

Report:

1) Project 1: The structural cycle of tubulin (A. Nawrotek, B. Gigant)

We tested crystals from four related projects: (i) crystals of the tubulin-stathmin complex further complexed with a small peptide. We collected three dataset to 3 to 3.2 Å resolution. Refinement is in progress. (ii) Crystals of tubulin in complex with an engineered stathmin molecule. We already had a 4.2 Å resolution dataset collected on ID29 last November. Despite bigger, the crystals tested during this session diffracted poorly. A 4.4 Å dataset was collected. (iii) Crystals of tubulin further complexed with an auxillary protein. We had only two crystals of this kind. From one crystal, we collected a 2 Å resolution dataset. The unit cell is not big enough to accommodate both proteins. As the structure of the two partners are know, attempts to solve the structure by molecular replacement hence to determine the crystal content will be undertaken. (iiii) Crystals obtained in several different crystallization conditions were also tested. Some of them did not diffract. The others were salt crystals.

During this session there was a ring shutdown. Some time was also taken by the beamline staff to fix a bug. Therefore close to 3 hours were not available for the users.

2) Project 2: Bacterial quorum sensing (S. Zouhir, R. Grenha, S. Nessler)

This project focused on crystals of complexes between DNA and two effectors from *B. cereus*, PlcR and NprR. Both effectors require the presence their cognate regulatory peptide, i.e. papR and NprX, to interact with DNA.

- We tested different crystal forms of PlcR-PapR in complexes with 2 different oligonucleotides. We collected 3 data sets up to 2.8Å resolution. Molecular replacement using the structure of the PlcR-PapR binary complex should allow us to solve these structures and check if DNA is present in the crystals.

- We also tested different crystal forms of NprR-NprX in complex with 1 oligonucleotide but none of them diffracted above 8Å resolution an we did not collect any complete data set.