EUROPEAN SYNCHROTRON RADIATION FACILITY

INSTALLATION EUROPEENNE DE RAYONNEMENT SYNCHROTRON

ESRF

Experiment Report Form

The double page inside this form is to be filled in by all users or groups of users who have had access to beam time for measurements at the ESRF.

Once completed, the report should be submitted electronically to the User Office using the **Electronic Report Submission Application:**

http://193.49.43.2:8080/smis/servlet/UserUtils?start

Reports supporting requests for additional beam time

Reports can now be submitted independently of new proposals – it is necessary simply to indicate the number of the report(s) supporting a new proposal on the proposal form.

The Review Committees reserve the right to reject new proposals from groups who have not reported on the use of beam time allocated previously.

Reports on experiments relating to long term projects

Proposers awarded beam time for a long term project are required to submit an interim report at the end of each year, irrespective of the number of shifts of beam time they have used.

Published papers

All users must give proper credit to ESRF staff members and proper mention to ESRF facilities which were essential for the results described in any ensuing publication. Further, they are obliged to send to the Joint ESRF/ ILL library the complete reference and the abstract of all papers appearing in print, and resulting from the use of the ESRF.

Should you wish to make more general comments on the experiment, please note them on the User Evaluation Form, and send both the Report and the Evaluation Form to the User Office.

Instructions for preparing your Report

- fill in a separate form for each project or series of measurements.
- type your report, in English.
- include the reference number of the proposal to which the report refers.
- make sure that the text, tables and figures fit into the space available.
- if your work is published or is in press, you may prefer to paste in the abstract, and add full reference details. If the abstract is in a language other than English, please include an English translation.

ESRF	**Experiment title:** BAG - LEBS - 2012-1	**Experiment number**: MX-1429
Beamline: ID23-1	**Date of experiment**: 10/11/2012 from: 9h30 to: 8h00	**Date of report**: 17/12/2012
Shifts:	**Local contact(s)**: Dr Alexander POPOV	*Received at ESRF:*

Names and affiliations of applicants (* indicates experimentalists):

I. Mignot*

B. Gigant*

Report:

Project 1: Tubulin in complex with a tau fragment and stabilized by a stathmin-like domain.
We have obtained crystals of tubulin in a complex with a 117 residue-long construct of tau and further stabilized with a stathmin-like domain protein engineered to bind one tubulin. From data collected previously, we could find a molecular replacement solution for tubulin and the stathmin-like domain, but no electron density could be assigned to the third partner. Nevertheless, analysis of the crystal content by gel electrophoresis indicates that the tau fragment is present in the crystal. Moreover, the crystal packing cannot be explained with tubulin and the stathmin-like domain only.
As an attempt to locate and trace the tau polypeptide chains, we grew crystals with seleno-methionine versions of tau. During this session, we tested about 40 crystals and collected data from 15 of them. The diffraction was highly anisotropic, and the resolution was limited to about 4 Ang and was highly variable according to the crystal. Even data collected from different parts of the same crystal could hardly be merged together. No signal could be attributed to SeMet of the tau fragment.

Project 2: Tubulin in complex with the PN2-3 domain of the CPAP protein.
We have obtained crystals of T_2R in presence of a 50 residue-long peptide of the N-terminal part of the PN2-3 domain of CPAP. T_2R is the complex formed by two tubulin heterodimers with the stathmin-like domain of the RB3 protein. The crystals were obtained in a different buffer than those used to grow T_2R crystals alone. We collected data from two crystals. They diffract to 3 Ang resolution and belong to the $P2_12_12_1$ space group (cell dimensions a=65, b=128, c=250). It appears that it is the same crystal form than crystals of T_2R after proteolysis of the disordered C-terminal tail of tubulin. Whereas the PN2-3 N-terminal peptide was needed to crystallize T2R in these conditions, no signal for it could be seen in the electron density maps.