



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.

Deadlines for submission of Experimental Reports

- 1st March for experiments carried out up until June of the previous year;
- 1st September for experiments carried out up until January of the same year.

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.



	Experiment title: Structural studies of enzymes in the nucleotide metabolism	Experiment number: MX94
Beamline: ID29	Date of experiment: from: 16/4/2003 to: 18/4/2003	Date of report: 22/8/2003
Shifts: 6 (shared with MX93)	Local contact(s): Andrew McCarthy	<i>Received at ESRF:</i>
Names and affiliations of applicants (* indicates experimentalists): Sine Larsen Eva Johansson* Susan Arent Anders Kadziola		

Report:

dCTP deaminase, UPRTase, Uridine/cytidine kinase, dihydropyrimidinase, xanthine phosphoribosyl transferase, and CTP synthase were the enzymes included in the original application on enzymes in the nucleotide metabolism.

Crystals of dCTP deaminase from *E. coli* were tested, but only poor diffraction was obtained. The crystals were very small and since then, higher quality crystals have been acquired.

The CTP synthase crystals tested were still disordered, despite dehydration experiments and diffraction was only seen to 6 Å resolution.

Crystals of UPRTase from *Sulfolobus solfataricus* in complex with the regulatory nucleotide GTP were tested, but only poor diffraction was obtained. A dataset from a crystal of *Bacillus subtilis* UPRTase in a complex with product UMP, was obtained to a resolution of 4 Å. Despite the relative modest resolution it should be possible from these data to determine the quaternary structure and the overall fold of UPRTase from this organism.

Moreover, data for two projects within this project area not originally described in the application were also collected. These were data on PRPP synthase from spinach, which proved to diffract poorly (8Å resolution) and furthermore data on the tetrameric cytidine

deaminase from *Bacillus psychrophilus*. The latter diffraction data were collected at ID14-4 (as a backup for beamtime allocated to project MX88). A complete data set on these small crystals were obtained to 2.4 Å resolution and the structure has been determined by molecular replacement and is presently being refined.