EUROPEAN SYNCHROTRON RADIATION FACILITY
INSTALLATION EUROPEENNE DE RAYONNEMENT SYNCHROTRON

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 original report should be sent, together with 5 reduced (A4) copies, to the User Office.

In addition, please send a copy of your file as an e-mail attachment to reports@esrf.fr**,** using the number of your experiment to name your file. This will enable us to process your report for the ESRF Annual Report.

Reports accompanying requests for additional beam time

If your report is to support **a new proposal**, the orginal report form should be sent with the new proposal form, and a copy of your report should be attached to each copy of your proposal. 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.
- bear in mind that the report will be reduced to 71% of its original size. A type-face such as "Times", 14 points, with a 1.5 line spacing between lines for the text, produces a report which can be read easily.

Postal address: User Office, ESRF, B.P. 220, F-38043 GRENOBLE Cedex, France
Street address: 6 rue Jules Horowitz, F-38043 GRENOBLE Cedex
Telephone: +33 (0)4 7688 2552; Fax: +33 (0)4 7688 2020; e-mail: useroff@esrf.fr

ESRF	**Experiment title:** YDC2/DNA complexes.	**Experiment number**: LS-1820
Beamline: ID14-4	**Date of experiment**: from: 01/11/00 to: 03/11/00	**Date of report**: 28/02/01
Shifts: 2	**Local contact(s)**: Raimond Ravelli	*Received at ESRF:*

Names and affiliations of applicants (* indicates experimentalists):

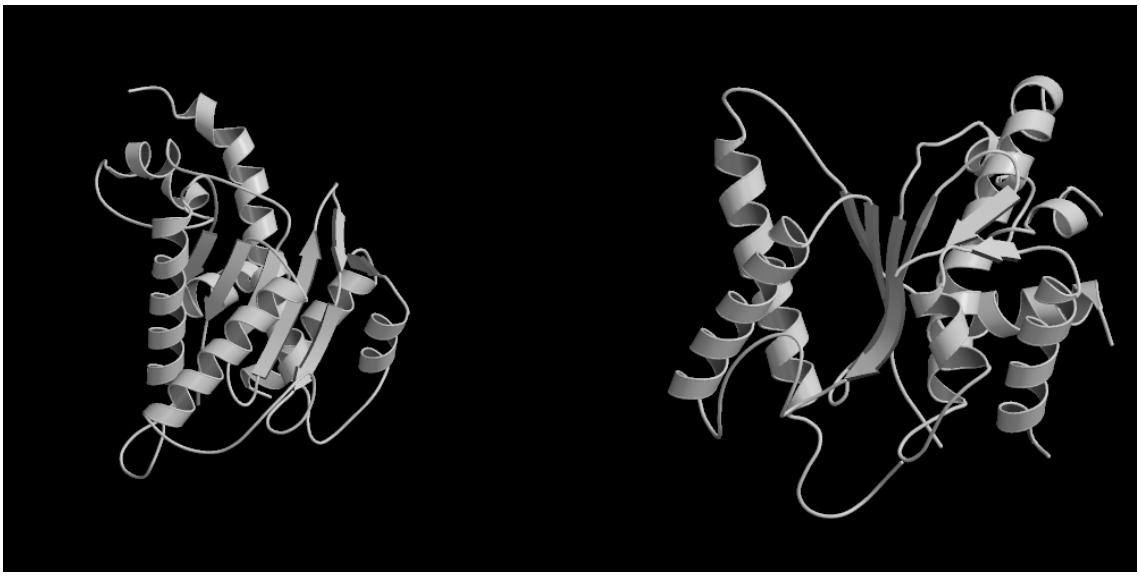
Tracey Barrett* – Institute of Cancer Research.
Mark Roe* – Institute of Cancer Research.
Laurence Pearl – Institute of Cancer Research.
Irina Tsaneva – University College London.

Report:

3 wavelength Se-met MAD data were collected on two crystal forms of native Ydc2.
The first (form1, orthorhombic with two molecules in the asymmetric unit related by a translation vector of (0,0,0.5)) diffracted to 2.8Å, but it was only possible to collect data to approximately 3.8Å on the second monoclinic form. Initial attempts at structure solution using all wavelengths failed to give an interpretable map, even though there was plenty of anomalous signal. Using only the form1 "peak wavelength" data though, it was possible to determine the Se positions using SOLVE and an interpretable map obtained after the initial phases were submitted to RESOLVE. It was possible to build approximately 50-60% of the total structure into the initial map. The initial structure was also used to molecuar replace into an earlier 2.7Å data set in a related smaller orthorhombic crystal form (form 3). Refinement is well underway using both form 1 and form3 crystal forms.The current R-factor is ~30% and the Rfree is ~35% with about 80% of the structure modelled.

Ydc2 is the first eukaryotic Resolvase to have its 3D structure determined and as predicted has a similar fold to RuvC. There are, however, distinct differences and it has been possible for us to analyse these in the context of the available biochemical data.

We are currently attempting to cocrystallise YDC2 with various Holliday junctions to obtain the functional complex.



Top and side views of YDC2.