



Experiment title: Structural Studies of 4-way DNA Holliday junctions, RepAl and *E. coli* Amine Oxidase.

Experiment number:
LS548,

Beamline:

ID02

Date of experiment:

from: 4th October 1996 to: 6th October 1996

Date of report:

17* February

Shifts:

6

Local contact(s):

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Received at ESRF:
28 FEB. 1997

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Report:

We collected four complete data sets during our beam time all of which are useful and are being used in ongoing structural determinations.

The first was a high resolution, native data set for active *E.coli* Amine Oxidase collected with the aim of elucidating the disorder in the active site. The data is good to 2.05Å (R_{symm} 0.058 for all data, and 0.19 in the last resolution shell). Even higher resolution could not be collected as the crystals diffract anisotropically and the crystal used for data collection was mounted so that the highest resolution data was not in the direction of the two theta arm. The 2.05Å

Two data sets were collected for RepAl, a 2.0Å native data set which required two passes, one at high resolution the other, using the detector as a small Mar, at 3.5Å The combined data set has a R_{symm} of 0.08. A 2.5Å mercury (pcmb) derivative data set was also collected which has a R_{symm} of 0.05. Both data sets have been incorporated into the MIR phase calculation and work is currently under way building the initial model.

The final data collected was for crystals containing T7 endonuclease I complexed with a DNA Holliday junction. This data is useful to 3.5\AA (overall R_{symm} 0.10) but diffraction from other, non-single, crystals was observed to higher resolution. Crystals soaked in heavy atom solutions were also shot but none diffracted to high enough resolution to merit data collection. The native complex data will be used in the future when successful heavy atom derivatives have been found. Data from DNA Holliday junction alone crystals was also collected but none of the crystals diffracted to beyond 10\AA and the complete data set collected proved to be unprocessable due to a very high mosaicity and a lack of spots due to the low resolution.

We are pleased with the data collected during this beam time and would like to thank the beam line staff, in particular Ed Mitchell, for their assistance.