

BAG Beam time Progress Report

This represents a summary of the BAG progress in the reporting period, and is **in addition to** the standard ESRF report sheet for each project which will be used for the Review of the BAG.

BAG Title

Allocation Period

List of publications resulting from ESRF beam time

N.Verdager, T.C.Marlovits, J.Bravo, D.I.Stuart, D.Blaas and I.Fita

“Crystallization and preliminary X-ray analysis of human rhinovirus serotype 2 (HRV2)”.

Acta Cryst. **D55**, (1999), 1459-1461.

N.Verdager, D.Blaas and I.Fita

“Structure of Human rhinovirus serotype 2 (HRV2)”

(Submitted)

Global Summary

Human rhinoviruses are classified into a major and minor group based on their bonding to ICAM-1 or to members of the LDL-receptor family, respectively. The structure of human rhinovirus 2, that uses the LDL receptor for cell attachment has been solved and refined at 2.6 Å resolution. Main structural differences between HRV2 and other rhinoviruses are located at the internal protein shell surface and at the external antigenic sites. In the interior, the N-termini of VP1 and VP4 form a three stranded β -sheet in an arrangement similar to that present in poliovirus, although myristate was not visible at the amino terminus of VP4 in the HRV2 structure. The β E- β F loop of VP2, a linear epitope within antigenic site B recognized by monoclonal antibody 8F5, adopts a conformation considerably different from that found in the complex of 8F5 with a synthetic peptide of the same sequence. This either points to considerable structural changes impinged on this loop upon antibody binding or to the existence of more than one single conformation of the loop when the virus is in solution. The hydrophobic pocket of VP1 was found to be occupied by a pocket factor apparently identical to that present in the major receptor group virus HRV16.

Visits made to the ESRF

| Date(s) of visits | Beamline | No. of Shifts | Short Summary of each Visit |
|--------------------------|-----------------|----------------------|--|
| 13-02-2000/15-02-2000 | ID14-2 | | Partial data collection till 2.5 Å resolution. |