ESRF	**Experiment title:** Very-Short-Patch-Repair Enzymes.	**Experiment number**: LS-1527
Beamline: ID14-3	**Date of experiment**: from: 17/11/99 to: 18/11/99	**Date of report**: 22/2/00
Shifts: <1	**Local contact(s)**: Sigrid Stuhrmann	*Received at ESRF:*

Names and affiliations of applicants (* indicates experimentalists):

Mark Roe - ICR*
Karen Bunting - ICR*
Laurence Pearl - ICR

Report:

Data was colected on the very-short-patch-repair (VSR) enzyme from E.coli bound to its cognate DNA.The DNA was designed such that, on annealing, five base sticky ends were left available. It was our hope that these would anneal in the crystal, head to tail, thus promoting crystallisation. This indeed proved to be the case (Figs 1,2). The DNA has formed infinite helical rods due to the protein bonding to the outside face and distorting the DNA. The crystals though, were small and have a high solvent content, thus limiting processable diffraction to 2.9Å. The structure was solved by molecular replacement using the free enzyme structure (pdbcode 1VSR, Tsutakawa et al., Molecular Cell 3 pp. 621 (1999)). At this resolution we can still see interesting details of the active site including a Hoogsteen base pair. Larger crystals have now been grown and it is hoped data to a higher resolution will be collected on the next trip (Feb).

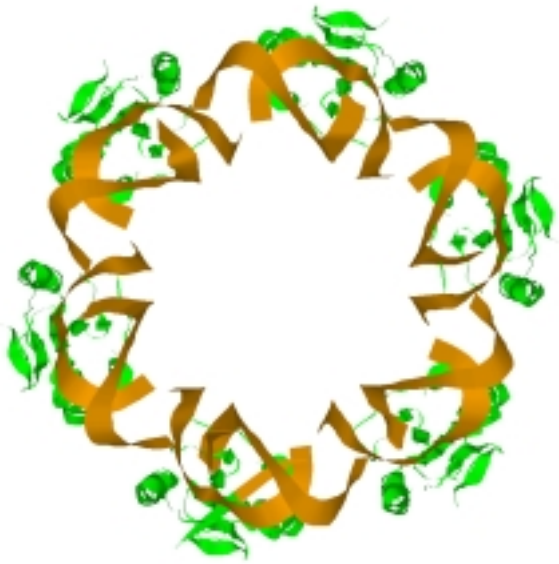

Fig 1.

Top view of DNA ‘helix’’.

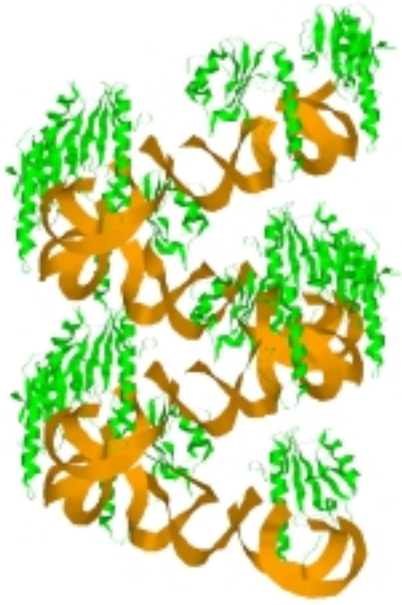

Fig2.

Side view of DNA ‘helix’.