

**Experiment title:**

X-ray Structure Determination of the Nucleosome Core Particle at 3.5 Å and at 2.0 Å Resolution

Experiment**number:**

LS237 and LS462

Beamline:**Date of experiment:** several data collections

from: 1994

to: 1996

Date of report:

29 August, 1996

Shifts:

approx. 50

Local contact(s):**LS237:** BL1 - C. Riekkel, and LS237: BL3 - M. Wulff**Received at ESRF:**

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Report:

The structure of a totally recombinant nucleosome core particle containing the octamer of core histone proteins H2A, H2B, H3, and H4, and a 146 bp DNA has been solved by X-ray crystallography at 2.8 Å resolution. At the present stage of refinement of this 206 kD nucleoprotein complex, the detailed course of the DNA can be seen as well as the high resolution structure of the histone octamer. Many features of the octamer not observed at lower resolution are now apparent. A publication describing the structure and methodology used is in preparation. This work was carried out entirely on BL1.

The processing of the 2.0 Å data collected on BL3 is in progress and nearing completion. This data should increase the accuracy of the nucleosome core particle structure significantly and permit identification of the ordered water molecules in the structure.

We look forward to further data collection at the ESRF in the future for the core particle and the complete nucleosome from crystals that contain different DNA sequences, modified histones, and bound transcription factor domains.