



	Experiment title: Structure determination of small RNA bacteriophages and RNA complexes. BAG: Uppsala (II)	Experiment number: LS-1804 Liljas
Beamline: ID14-EH1	Date of experiment: from: 2 Dec 2000 to: 4 Dec 2000	Date of report: 24 Aug 2001
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Report:

We have studied a series of complexes between virus-like capsids of the bacterial virus MS2 and RNA hairpins that are variants of the translational operator of one of the viral genes. This work has resulted in a number of publications.

In the present experiments, two complexes were studied, representing changes at two positions of the RNA that have been shown to be important for the specific binding. Both these variants (G -5 and C -7) have the lowest affinity of the natural bases at these two positions of the RNA. To get reasonably high resolution, the MS2 crystals are at least 0.7 mm in their largest dimension, and we have not been able to freeze these crystals. Data collection was performed on two crystals of the G -5 complex and one crystal of the C -7 crystal.

The G -5 complex gave data to a resolution of 2.8 Å with a completeness of 73 %. The structure of this complex is deposited to PDB, and a paper describing the complex is

submitted to the journal RNA. The crystals used for the C₇ complex were poor, and a 80 % complete dataset to only 3.3 Å resolution was obtained. With the help of the non-crystallographic symmetry of the icosahedral particles, this was still sufficient for a structure determination, and the coordinates have been deposited in the PDB. A paper describing this structure is in preparation.