

**Experiment title:**

Applicability of lipidic cubic phases to the crystallization of various membrane proteins

**Experiment****number:**

LS-2160

<b>Beamline:</b> ID13	<b>Date of experiment:</b> from: Jan. 28, 2002 to: Jan. 29, 2002	<b>Date of report:</b> March 1, 2002  <i>Received at ESRF:</i>
<b>Shifts:</b> 3	<b>Local contact(s):</b> Manfred Burghammer	

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We were awarded combined beamtime for experiments LS-2158, 2159 and 2160. In the first run, which was conducted on Jan. 28-29, 2002 on ID 13, we concentrated our efforts on experiment LS-2160. In the next run (to be held on March 6-9, 2002), we will have 9 shifts on ID 14 to complete this experiment and to conduct experiments LS-2158 and 2159.

On ID 13, a total of 21 crystals from four different proteins were tested:

The first system crystallized in thin needles (typically with a section of 1 micron). These needles could not be handled individually and a large number of needles packed in an urchin-like object were put in the beam. Some small angle diffraction rings were observed. The d spacings calculated from the rings correspond to about 50 Å and can therefore be attributed to lipids surrounding the needles. Nevertheless, these crystals have to be investigated further.

The second system crystallized in nice looking colored crystals, but they showed no diffraction. It is possible that they were damaged during the transportation.

The third system crystallized in very thin needles (5x5x100 microns) and diffracted for the first time to 2.8 Å. 2 data sets were collected (crystal to detector distance= 150mm, exposure time per degree=15s). The axis along the needle is probably disordered, and none of the data sets could be integrated. These first diffraction tests show the diffraction power of such small crystals and helps to conduct the crystallization. Indeed, the large size along the needle prevents a correct ordering and crystallisation additives will now be screened in order to reduce the growth along the needle.

The fourth system diffracted to 2 Å, a data set could be collected, the data show a highly mosaic crystal and are under investigation.