ESRF	Test measurements on crystals of Sm proteins D1, D2, E, F, G in complex with pICln and crystals of the complex between SMN, Gemin2, Sm proteins D1, D2, E, F, and pICln (Grimm)	**Experiment number**: MX-848
Beamline: ID29	**Date of experiment**: from: 26/04/2009 to: 27/04/2009	**Date of report**: 04/05/2009
Shifts: 1	**Local contact(s)**: David Flot	*Received at ESRF:*

Names and affiliations of applicants (* indicates experimentalists):

Clemens Grimm*
Thomas Müller

Report:

The SMN-complex promotes RNP formation by catalyzing the joining of U snRNP-proteins (termed Sm proteins) with U snRNA.
We have reconstituted and crystallized a representative subcomplex from this pathway, comprising SMN, Gemin2, Sm proteins D1, D2, E, F, G and pICln ("8S-complex").
Initial crystals from the 8S complex tested during Experiments TC-209 and TC-212 diffracted up to 4.5 Å resolution. Meanwhile, we have improved those crystals to a diffraction limit of around 3.5 Å and a first dataset with a useful upper resolution limit of around 4.5 Å could be collected during this experimental session (table 1). The plate-like crystals belonging to space group 23 or 24 showed very strong anisotropic diffraction behaviour.
Due to technical problems with the sample changer and the detector, we had to postpone planned post-crystallization optimization and heavy metal soaking experiments.

Dmin(Å)	Rsym [%]	I/sigma(I)	Completeness [%]	multiplicity
14.0	3.9	30.84	93.5	5.0
10.0	4.6	30.30	98.3	5.3
8.00	7.5	22.12	98.8	5.5
7.00	14.0	12.80	99.4	5.7
6.00	37.0	5.66	99.8	5.8
5.00	57.0	3.78	99.8	5.9
4.50	53.7	3.40	92.9	4.7
Overall	17.3	9.10	97.5	5.4
Space group	I222/I212121			
Cell constants	A=71.3 B=149.5 C=227.3			

Table 1: Dataset statistics for a crystal obtained from 8S particle.

ESRF	Data acquisition of TGF-β ligand-receptor complexes (Müller)	**Experiment number**: MX-848
Beamline: ID29	**Date of experiment**: from: 26/04/2009 to: 27/04/2009	**Date of report**: 04/05/2009
Shifts: 1	**Local contact(s)**: David Flot	*Received at ESRF:*

Names and affiliations of applicants (* indicates experimentalists):

Clemens Grimm*
Thomas Müller

Report:

Ligands of the TGF-β superfamily are involved in many aspects of cell differentiation, proliferation and apoptosis durch embryonic development and also control crucial steps in tissue homeostatis in the adult organism. The limited number of receptors together with a large number of ligands suggests promiscuous interactions between ligand and receptors making them a valuable toll to study protein-protein recognition.

We have prepared different ligand-receptor complexes of Growth and Differentiation factor 5 (GDF-5) bound to its type I receptor BMPR-IA and its type II receptor ActR-IIB. Another complex comprises of GDF-5 bound to a chimeric receptor mutant which uses the scaffold of BMPR-IA but has the ligand binding epitope of BMPR-IB. A dataset of the latter complex could be acquired with a resolution of 3.1Å, the data analysis and structure determination is currently in progress. Due to technical problems with the sample changer crystals of the first complex were unfortunately lost. A third complex comprising the TGF-β ligand GDF-11, which has important functions in controlling muscle growth, and its type II receptor ActR-IIB was also measured. Although large crystals were obtained from optimization screens diffraction was limited to 5Å resolution.