ESRF	**Experiment title:** Protein Fibrillation Mechanism	**Experiment number**: MX-1515
Beamline: BM29	**Date of experiment**: from: 11 May 2013 at 09:30 to: 12 May 2013 at 08:00	**Date of report**: 5 Sept 2013
Shifts: 3	**Local contact(s)**: Petra Pernod	*Received at ESRF:*

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Report:

The overall aim of the experiments was to obtain low-resolution structures for amyloid intermediates and mature aggreagates in different physico-chemical conditions.

For one system several data were collected on both wt and mutant forms particularly focusing on investigating effects of different solvent composition. The data collected are part of several projects elucidating different aspects of the fibrillation process and will be included in publications currently in preperation.

Solvent effect on the fibrillation process were tested on another amyloidogenic protein. Data were collected at different stages of the kinetics for three different experimental conditions in which the solvent properties have been modified by addition of ethanol. For this set of measurements, the analysis and the preliminary recover of the low-resolution structures are in progress. It is expected that, to have a proper deconvolution of the SAXS signal and a reliable determination of the involved structures, further experiments are needed. Such results will be then validated against imaging data.

In addition several full fibrillation processes were followed. E.g. a set of data from fibrillation processes of the same protein incubated at different temperatures, has been collected with the aim of showing that the similar structures occur independently of the incubation temperature. Moreover a preliminary test on the possibility of quenching the

process at different stages has been attempted and should be improved. Further experiments are needed to test the possibility of using pre-aggregated samples quenched and kept at -20°C or -80°C. These data are currently being processed and further analyses are needed before we can fully conclude on these.

Note: We have chosen to anonymize the amyloidogenic proteins in this publically available report as some studies are still preliminary.