

Run LS-2391 1-5 July 2015

Participants: Nathalie Colloc'h, Eric Girard, Anne-Claire Dhaussy, Hans-Robert Kalbizter, Pedro Lopes

Local contact: Gaston Garbarino

Beam parameters $\lambda = 0.415 \text{ \AA}$
 Dist = 287 mm
 Detector: MAR555

Cell alignment: U20 with a 19 mm gap

Data collection: U20 with a 10.5 mm gap

Data collection

No problem with the beamline. A lot of data set collected during the run.

Wild-type Ras at different pressure: 1, 200, 450, 500, 1200, 1500, 2000, 2500, 2700, 3700, 4900 bar.

Wild-type Ras soaked in Zn-cyclen (an inhibitor): compressibility curve from 1 to 2500 bar.

Ras mutant H166A: compressibility curve from 1 to 5000 bar.

Scientific results

Wild-type Ras crystals can withstand very high pressure (above 3000 bar) but only with an incubation of a few hours at a pressure around 2000 bar. This is consistent with HP-NMR data which revealed that around 2000 bar multiples conformations exists in equilibrium while at higher pressure a pure excited state should be stabilized.

The high resolution structures from the data collected in July have not been refined yet. The pressure-induced structural modifications will be compared with pressure-induced chemical shifts revealed by HP-NMR experiments.

Preliminary results on complex between Ras and Zn-cyclen revealed that they can also withstand high pressure. Ras mutant H166A seems to behave similarly than wild-type Ras.