

Experiment title: Quorum sensing effector NprR & Hsp90 chaperone machinery, regulation by co-chaperones.

Experiment number: MX-934

Beamline: ID23-eh2

Date of experiment: 21/06/2010 from: 9h30 to: 00h00

Date of report: 24/01/2011

Shifts: 1.5

Local contact(s): Max NANA O

Received at ESRF: Names and affiliations of applicants (* indicates experimentalists):

Samira Zouhir * (CNRS, University Paris XI; PhD student), Philippe Meyer* (LEBS-CNRS, Gif s/ yvette; CR1 CNRS); Olivier Jalmar* (LEBS-CNRS; Ph.D. student).

Report:

Project 1: Quorum sensing effector NprR (S. Zouhir, 9h30-17h30)

49 crystals of three different forms of NprR were tested:

- The apo-form of full-length NprR diffracted up to 10Å and data were anisotropic.
- The apo-form of truncated NprR diffracted up to 5Å.
- The complex between truncated NprR and a 7aa-long form of its cognate peptide NprX diffracted up to 5Å.

No complete data set was collected.

Project 2: Hsp90 chaperone machinery, regulation by co-chaperones (P. Meyer, O Jalmar, 17h30-0h00).

Background

Hsp90 is a molecular chaperon responsible for the regulation of many eukaryotic client protein involved in cell signalling and regulation. Client proteins are targeted to Hsp90 by co-chaperons but little is known about the molecular mechanism involved in this recognition. Here, we focused our attention on the cochaperon HOP/Sti1 (Hsp Organizing Protein) that mediates the interaction between the two chaperone systems Hsp70 and Hsp90 and is responsible for the transfer of client proteins from one chaperone to the other.

Results

The use of the microfocus beam line has allowed us to test several forms of recently obtained small co-crystals of the Hsp90/HOP complex. We have tested over 50 crystals and found a crystal form diffracting to round 7Å (cell parameter a=64.48, b=76.41, c=211.43). We have been able to confirm the presence of the protein complex within the crystals and this experiment helped us in choosing proper directions for further crystal optimization.