ESRF	**Experiment title: STRUCTURAL STUDIES ON LmACR2, an As/Sb REDUCTASE BELONGING TO THE RHODANESE PROTEIN FAMILY**	**Experiment number**: MX267
Beamline: ID 14-3	**Date of experiment**: from: 02/10/2004 to: 04/10/2004	**Date of report**: 25/07/2004
Shifts: 3	**Local contact(s)**: **Dr Stéphanie MONACO**	*Received at ESRF:*

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Report:

Background

Sulphutransferase or rhodanese enzymes form a large protein family involved in sulphur transfer and mobilization in both eucaryotic and procaryotic cells. Rhodanese domains are also found in the catalytic subunit of Cdc25 phosphatase enzymes and the two enzyme families are likely to share a common evolutionary origin. LmAcr2 is a 15 kDa (127 aminoacids) protein from *Leishamnia major* containing a single rhodanese domain and displaying the capability to reduce both As (V) and Sb (V) to As(III) and Sb(III). Several antimonial compounds are drugs commonly used for the treatment of the leishmanial disease and LmACR2 is involved in the conversion of the medically inactive drug Pentostam, containing pentavalent antimony, to its trivalent active form. In the attempt to understand the molecular mechanism by which LmAcr2 reduces its substrates, we are carrying out crystallographic studies on this protein.

Results

LmAcr2 crystals suffer thermolability and showed limited diffraction power, up to a resolution limit of 3.5Å. Crystal quality must be improved.