ESRF	**Experiment title: STRUCTURAL STUDIES ON LmACR2, an As/Sb REDUCTASE BELONGING TO THE RHODANESE PROTEIN FAMILY**	**Experiment number**: MX394
Beamline: ID 23-1	**Date of experiment**: from: 20/04/2005 to: 21/04/2005	**Date of report**: 25/07/2004
Shifts: 3	**Local contact(s)**: **Dr. Laurent TERRADOT**	*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

Crystals of the protein were obtained and showed a diffraction limit at 2.2 Å resolution. At the moment, we are performing further experiments to obtain better and more stable crystals, and to solve the protein structure whit the method of Multiple Isomorphous Replacement (MIR) or with molecular replacement.

References

Bisacchi D,Zhou Y, Mukhopadhyay R and Bordo D (2005) Crystallization and preliminary crystallographic characterization of LmAcr2, an As/Sb reductase from Leishmania major.(submitted).