

| | | |
|---|---|---|
| | Experiment title: The apoptosis-inducing factor AIF | Experiment number: LS-1685 |
| Beamline ID-14.4 | Date of experiment: June 23 rd , 2000 | Date of report: August 28 th <i>Received at ESRF:</i> |
| Shifts: | Local contact(s): | |
| Names and affiliations of applicants (* indicates experimentalists): Alejandro Buschiazzo, Beatriz Gomes Guimaraes, Maria J. Mate Perez, Miguel Ortiz, Pedro M. Alzari Unité de Biochimie Structurale, Institut Pasteur, 25 rue du Dr. Roux, 75724 Paris, France | | |

Report:

The apoptosis-inducing factor (AIF) is a mitochondrial oxydoreductase capable of inducing the typical pattern of programmed cell death in isolated nuclei. Normally confined to the mitochondria, AIF is released from mitochondria as a 57 kDa protein which translocates to the nucleus, where it triggers chromatin condensation and large-scale fragmentation. We have obtained orthorhombic and monoclinic crystals of recombinant AIF. These crystals were shown to diffract X-rays to at least 2.5 Å resolution, but they are often partially disordered (high mosaicity) and very sensitive to freezing.

During the last six months, we have tested several crystals soaked with mercurial compounds and frozen using different strategies. For one of the crystals, we were able to collect a MAD data set at three different wavelengths. The statistics is summarized in the table below. Structure determination is currently in progress using this derivative, although the phasing power is relatively low and we will probably require additional beam time to complete the structure determination.

| Crystal form | Beam-line | λ (Å) | No. of images | Space group | a (Å) | b (Å) | c (Å) | Data resolution (Å) | Data complet. (%) | R _{merge} (%) | Multiplicity |
|---------------------|-----------|---------------|---------------|---|-------|--------|--------|---------------------|-------------------|------------------------|--------------|
| AIF (Hg derivative) | ID-14.4 | 0.95 | 85 | P2 ₁ 2 ₁ 2 ₁ | 87.09 | 112.48 | 112.71 | 2.2 | 98.9 | 8.3 | 3.3 |
| | | 1.07 | 85 | | | | | 2.2 | 97.2 | 8.5 | 3.1 |
| | | 1.09 | 85 | | | | | 2.2 | 97.8 | 8.7 | 3.3 |

The apoptosis-inducing factor AIF