



**Experiment title: Weizmann Institute of Science
Structural Biology (WIS-SB, BAG)**

**Experiment
number:**
LS-1818

Beamline:
ID-14-4

Date of experiment:
from: Nov 15, 2000 to: Nov 17, 2000

Date of report:
Aug. 30 2001

Shifts:
6

Local contact(s): Ed Mitchell

Received at ESRF:

Names and affiliations of applicants (* indicates experimentalists):

Prof Joel L. Sussman, Weizmann Institute of Science (WIS)

The following were experimentalists

***Dr. Michal Harel (WIS)**

***Dr. Anne Nicolas (WIS)**

***Mr. Hay Dvir (WIS)**

***Mr. David Shaya (WIS)**

Report:

Crystals (in drops over wells containing yarn soaked in mother liquor) brought to the ESRF of the WAT-PRD complex did not fare well in transport, and most were found dissolved upon examination. These were crystals which contained Sel-Met protein for MAD data. The few remaining proved too small for handling. (This complex contains 4 tryptophan-rich tails of certain forms of acetylcholinesterase (AChE) in complex with a prolin rich peptide, which anchors the tetrameric form of AChE to the membrane.) As a result of this, subsequent trips involving this protein used only pre-frozen crystals.

Several data sets were collected involving recombinant human AChE (rhAChE). One was a native data set and 3 others were complexes with potential Alzheimer's drugs. All previous studies have used AChE from the torpedo fish. Since there are often kinetic differences between species for these inhibitors, comparison of the complexes between species is important. The native structure was solved by molecular replacement, and is undergoing refinement.

10 data sets were collected on cerezyme, implicated in Gaucher's Disease: one native and nine potential heavy atom derivatives. Seven did not show any consistent peaks. 2 MAD data sets were collected, on a soak with Hg⁺⁺ and Pt. The mercury soak showed

no consistent peaks. The Pt soak did yield a derivative, but not of sufficient quality to solve the structure.

Some crystals of bungarotoxin, from cobra venom, grew just before the scheduled beam time, and so these were measured as well. They diffracted, but could not be indexed, owing to what looked like multiple crystal diffraction.