ESRF	**Experiment title: Studies of motor proteins**	**Experiment number**: LS-1794
Beamline: ID14-1	**Date of experiment**: from: 2-11-00 to: 3-11-00	**Date of report**: 2-2-01
Shifts: 3	**Local contact(s)**: L. DUMON	*Received at ESRF:*

Names and affiliations of applicants (* indicates experimentalists):

C. Cohen-Addad*

F. Kozielski*

R. Wade

Isabel Garcia-Saez*

Report:

A) Motor proteins

Studies of motor proteins and cytoskeleton protein: crystallization tests on a complex between the tubulin and the protein SCG10 and on motor kinesins.
BAG-LS1794 (ID14EH1 7-8/10/2000 and 2-3/11/2000)

Tubulin is a 100 kDa heterodimer that aligns head-to-tail along the protofilaments in the wall of microtubules. Microtubules are major components of the cytoskeleton in eucaryotic cells where they play various and essential roles in cell division and intercellular traffic.
SCG10 is a neuron-specific protein, membrane associated and concentrated in growth cones. It binds to microtubules and induces their disassembly. We have shown the existence of a stable complex between a soluble fragment of SCG10 and two dimers of tubulin. Crystals were obtained and diffracted up to 6 Å

resolution with cell parameters : P212121, a=56, b= 353, c= 466Å (D. Fleury & al., JSB, 2000, 131,156-158)

We have recently obtained crystals of a complex between a shorter fragment of SCG10 (90 aminoacids instead of 131). The crystals, tested on ID14EH1, diffracted weakly up to 10 Å and the diffraction pattern showed smaller cell parameters, estimated to 220x220x45 Å.

Improvement of the crystallization is in progress.

Kinesin is a microtubule associated motor protein and plays many essential roles within eucaryotic cell. Crystals of two kinesins from Drosophila were tested. They diffracted weakly. Crystallization is in progress.

B) VIM-2 beta-lactamase

Analysis of crystals of beta-lactamase VIM-2 co-crystallised with the inhibitors S- & R-thiomandelic acid, and soaked with fresh preparations of these drugs in the laboratory available in the beamline. Two data collection at 1.97 & 2.4 Å were collected from a crystal of VIM-2 co-crystallised and soaked with R-thiomandelic acid and also two other data sets were collected from a crystal of VIM-2 co-crystallised and soaked with S-thiomandelic acid at the same resolution. All were flash-frozen in the cryostream after soaking in 15% glycerol. Space group I222, and unit cell parameters a= 67 Å b= 78 Å c= 80 Å. Structure solution of both crystals gave no occupancy of the drugs in the active site.