ESRF	**Experiment title: High resolution structure of a mono-oxygenase from Streptomyces coelicolor: a very small enzyme involved in involved in the synthesis of polyketide antibiotics.**	**Experiment number**: LS1789
Beamline: BM14, ID14-2	**Date of experiment**: from: 16 Sept 2000 to: 17 Sept 2000	**Date of report**: 28/2/2001
Shifts: 6	**Local contact(s)**: Ed Mitchell	*Received at ESRF:*

Names and affiliations of applicants (* indicates experimentalists):

Dr. B. VALLONE
Dr. Luca FEDERICI
Dr. Steven KENDREW
Dr. Adriana MIELE
Dr. Carmelinda SAVINO
Dr. Giuliano SCIARA
Dipartimento di Scienze Biochimiche, Università di Roma "La Sapeinza", P.le A.Moro 5, 00185 Roma.

Report:

This experiment should have consisted of two sessions on different beam lines, in the first one we tried to perform a MAD experiment on BM-14, but due to technical problems of the experimental station itself we could only collect an Hg derivative data set.

The secon part was indeed very successful, since during three shifts we managed to collect two data sets of the S. coelicolor monooxygenase, native and co-crystallized with Sodium Bromide complete to 1.0 A resolution, with evidences of useful diffraction up to 0.8 A resolution, which were collected in three different sweeps (low, medium and high resolution).

We have also collected two data sets of soaks of S. coelicolor monoxygenase with a substrate analogue at 1.5 A resolution, these data will allow us to define the molecular basis for substrate recognition and hopefully provide some information on the reaction mechanism.

We have finally solved the structure of S. coelicolor monoxygenase and we are currently refining it at 1.3 A resolution, the resulting publication will acknowledge the ESRF contribution.

Part of the time on ID14-2 was used to collect a native data set on the DNA polimerase from S. solfataricus, which gave a very relevant contribution also to this project since we have brought the resolution from 3.0 A to 2.4 A. We are currently solving this structure by molecular replacement.