ESRF	**Experiment title:** GDP 4-keto-6-deoxy-D-mannose epimerase/reductase mutants (Y136E, S107A, R45E).	**Experiment number:** LS1517
Beamline: ID14 1	**Date of experiment:** from: 11/09/99 to: 12/09/99	**Date of report:** 29.02.00
Shifts: 1	**Local contact(s):** E.Mitchell	*Received at ESRF:*

Names and affiliations of applicants (* indicates experimentalists):

(*) Camillo Rosano, Martino Bolognesi

Advanced Biotechnology Center
INFM-University of Genova
Italy

Report:

GDP-4-keto-6-deoxy-D-mannose epimerase/reductase is a bifunctional enzyme involved in the biosynthesis of cell-surface structures, such as blood group antigens. Each subunit in the homodimeric enzyme consists of two domains. The N-terminal domain displays a Rossmann-fold topology and binds the $NADP^+$ coenzyme. The C-terminal domain is held to bind the substrate. In order to shed more light on the *de novo* pathway of GDP-L-fucose synthesis, and hence to better understand cell to cell communication mechanisms, high resolution data collections of three mutants (Y136E, S107A, R45E) has been carried over at ESRF.

Structures have been determined and refined up to R-values of about 13.7%.

A scientific publication is in progress.