ESRF	Experiment title: Enzymes of ribose metabolism**.** Ribose-5-phosphate from *E. coliI. BAG: Uppsala (II)*	**Experiment number**: LS-2187-1a
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Report:

Ribose-5-phosphate isomerase A (RPI A) is an enzyme which performs the isomerization of ribose-5-phosphate to ribulose-5-phosphate or *vice versa.* The apo structure of *E.coli* RPI A has already been solved by two independent groups, but a collaboration with one of them has given us the opportunity to perform structural studies of *E.coli* RPI A and a possibility to gain deeper understanding of the enzyme by the study of RPI A/inhibitor complexes.

Two kinds of RPI A crystals were tested; one which had been soaked in a solution of inorganic phosphate and the other which had been co-crystallized with the inhibitor arabinose-5-phosphate (A5P). A dataset of the latter kind could be collected to 1.9 A. The data was of reasonable quality so the structure could easily be solved by Molecular Replacemement and auto-traced with the ARP/wARP package. Both of the active sites of RPI A was found to be occupied by the inhibitor, but only one of them had an occupance

useful for structural analysis. However, on closer look it was clear that the ligand was not A5P, but a product formed from it’s decomposition. A full structural analysis could not be performed as we were not able to identify the ligand.

When this data was collected, no structure of a ligand-bound RPI A was available. However, this structure, although not suitable for publication, had the very valuable feature of confirming the location of the active site.