



	Experiment title: TmrE. Bag Uppsala	Experiment number: MX-274
Beamline: ID14-EH1	Date of experiment: from: 14 May 2004 to: 15 May 2004	Date of report: 1 st Sept 2004 <i>Received at ESRF:</i>
Shifts: 3	Local contact(s): Stéphanie MONACO	
Names and affiliations of applicants (* indicates experimentalists): T. Alwyn Jones, Uppsala University, alwyn@xray.bmc.uu.se * Talal Gariani, Uppsala University, talal@xray.bmc.uu.se		

Report:

GTPases are important molecular switches found in most of the crucial pathways needed for a cell to survive. These proteins are grouped into the a so-called superfamily. The striking diversity of the GTPase superfamily is particularly evident in eukaryotes. Many different subfamilies of eukaryote GTPases have been described, including the Ras family of small GTPases, with is currently composed of five subfamilies, Ras, Rho, ARF, Rab and Ran. Bacterial GTPases appear to be more limited than their eukaryote counterparts in both number and function . Apart from those involved in protein translation apparatus, very few bacterial GTPases have been identified, and even fewer are known in archea. Given the wide-range importance of GTPases in eukaryotes, their apparently limited role in bacteria is surprising. Looking at bacterial genomes, the number of GTPases varies according to the genome size, however a certain number is universally conserved within all bacterial. Interest has been drawn on the little known Thdf/TrmE GTPase protein. The protein is essential for the normal function of the protein synthetic apparatus, and is involved in tRNA modification.

One native and a Br heavy atom soaked dataset have been collected. The heavy atom dataset were not of any use. More phasing is still needed to solve the structure.