



	<b>Experiment title:</b> Structural Investigation of imidazoleglycerol phosphatase dehydratase.	<b>Experiment number:</b> LS 1875
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<b>Shifts:</b> 3	<b>Local contact(s):</b> Dr. H. Belrhali	
<b>Names and affiliations of applicants (* indicates experimentalists):</b> Prof. D.W. RICE Dr. P.J. ARTYMIUK Dr. PATRICK J. BAKER* Dr J.B. RAFFERTY  University of Sheffield, Department of Molecular Biology and Biotechnology, Sheffield, S10 2TN. U.K.		

## Report:

### X-Ray Crystallographic Studies on Butyryl-ACP Reveal Flexibility of the Structure around a Putative Acyl Chain Binding Site.

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Anna Roujeinikova, Clair Baldock, William J. Simon, John Gilroy, Patrick J. Baker, Antoine R. Stuitje, David W. Rice, Antoni R. Slabas and John B. Rafferty

## Abstract

Acyl carrier protein (ACP) is an essential cofactor in biosynthesis of fatty acids and many other reactions that require acyl transfer steps. We have determined the first crystal structures of an acylated form of ACP from *E. coli*, that of butyryl-ACP. Our analysis of the molecular surface of ACP reveals a plastic hydrophobic cavity in the vicinity of the phosphopantethylated Ser36 residue that is expanded and occupied by the butyryl and  $\beta$ -mercaptoethylamine moieties of the acylated 4'-phosphopantetheine group in one of our crystal forms. In the other form, the cavity is contracted, and we propose that the protein has adopted the conformation after delivery of substrate into the active site of a partner enzyme.