



	<b>Experiment title:</b> Towards the Structure of the Ferredoxin-Dependent Glutamate synthase from <i>Synechococcus</i> sp.	<b>Experiment number:</b> LS-1664
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## Report:

We have obtained crystals of the ferredoxin-dependent glutamate synthase (GltS; for an introduction on this project see report on *A. brasilense* GltS) from *Synechococcus* sp (in collaboration with prof. J.F. Florencio, University of Sevilla, Spain). The investigation of this protein will shed light into the different substrate specificity among glutamate synthases belonging to different classes. Furthermore, we plan to study the structure of the protein in different redox states complexed to reaction intermediates.

Crystals of *Synechococcus* sp GltS belong to space group  $P4_32_12$  with unit cell parameters  $a=b=167 \text{ \AA}$  and  $C=220 \text{ \AA}$ . The asymmetric unit contains a GltS subunit (molecular mass of 154 kDa, one FMN and a 3Fe-4S cluster) and 73% solvent. We have measured a native data set to 3.3 Å resolution with the following statistics:

N° measurements=340,979

N° unique reflection=52,192

Completeness=99.1%

Multiplicity=6.5

Rsym=11.5 (highest resolution shell 38.4%).

Molecular replacement using the *A. brasilense* a subunit model, solved in our laboratory, gave a clear solution. Based on these results, we are carrying out experiments to improve the crystal quality, in order to be able to measure data at higher resolution.