



	Experiment title: Cellobiose dehydrogenases. <i>BAG: Uppsala (II)</i>	Experiment number: LS-1804
Beamline: ID14-1	Date of experiment: from: 04 Nov 2000 to: 06 Nov 2000	Date of report: 29 Aug 2001
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Report:

Cellobiose dehydrogenases (CDH) is the only known class of extracellular flavocytochromes. It is capable to degrade lignocellulose both alone and but much more efficiently together with lignin peroxidases and cellulases. Cellobiose dehydrogenases may form a vital redox link in lignocellulose degradation. The CDH clan can basically be divided into two groups: The acidophiles (represented by *Phaenerochaete chrysosporium*, *Trametes versicolor*, *Pycnoporus cinnabarinus*) and the thermophiles (represented by *Humicola insolens*, *Thielavia heterothallica*). The two groups have sequence identity in the 25-30% range.

We have determined and published the structure of the haem domain of CDH from *Phaenerochaete chrysosporium* (*P.c.*) (Hallberg *et al.*, Structure 8, 79-88). We have also determined the structure of the flavin domain of CDH from *Phaenerochaete chrysosporium* (in the press) by MAD and MIRAS methods. We have recently obtained crystals of the haem domain of CDH from *Humicola insolens*. Native data were collected to 1.9 Å resolution during this visit to the ESRF. Attempts to solve the structure by molecular replacement using the haem domain from *P.c.* were unsuccessful. However, this data were subsequently used in successful structure determination by SIRAS methods using a mercury derivative collected the 2-4 of Dec 2000 at ID14-EH1.