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Crystallographic Structural Determination of a Trigonal Laccase from Coriolopsis Gallica (CgL) to 1.5 Å Resolution

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Abstract content

Fungal Laccases are proteins secreted by filamentous fungi, which have the function of substrate oxidation of a wide range of compounds. Laccases have been of interest in the industry for its ability to transform various industrial dyes. The laccase studied in this work is extracted from Coriolopsis gallica (CgL), the enzyme has a molecular mass of aproximately 60 kDa, has a pI of 4 and an optimal activity between 50 and 70 ° C. CgL is a glycosylated protein whose glycosylation has been proposed to be responsible for the structural stability, thereof is a monomeric protein which in order to be active needs four copper atoms coordinated by histidines attached to a redox site, each copper is classified according to their spectroscopic characteristics. CgL was extracted and purified from the natural source and then was crystallized. CgL 3D structure was determined by diffraction of X-rays and a different crystal system to those previosly reported, by our group, and deposited in the pdb was found (pdb entry 4A2H, space group P212121). Analysis and study of this structure, as well as the structural differences due the different crystalline matrices are present.

Summary

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