Crystal Structures of Cytochrome c Peroxidases from *Ps. nautica* and *Ps. stutzeri*

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Cytochrome c peroxidase (CCP) catalyses the reduction of H_2O_2 to H_2O_3 an important step in the cellular detoxification process. The structure of the di-heme CCP from *Pseudomonas nautica* 617 was obtained in two different conformations, which require calcium activation, correlated with a spin state transition of the peroxidatic heme. Form IN, oxidized, obtained at pH 4 does not contain Ca²⁺. This inactive form presents a closed conformation the peroxidatic heme adopts a six ligand coordination, hindering the peroxidatic reaction from taking place. Form OUT, Ca²⁺ dependent, was obtained at pH 5.3, it shows an open conformation with the release of the distal histidine (His71) ligand, providing peroxide access to the active site. This form shows a bound Ca²⁺ ion, which is essential for the enzymatic activation, showing several conformational changes [1]. The structure of the CCP from *Ps. nautica* 617. These structures provide us with some more clues about the role of the Ca²⁺ in the activation of CCP [2].

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Bonifácio C., Cunha C.A., Müller A., Timóteo C.G., Dias J.M., Moura I., Romão M.J., *Acta Cryst.*, 2004, **59**, 345-347.

Keywords: peroxidases, heme, calcium activation