

A Bioinformatic/Structural biology approach to explore biochemical paths. The case of copper on cytochrome c oxidase assembling

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Cytochrome *c* oxidase is the terminal oxidase in the respiratory chain. It contains three copper ions, two in the Cu_A site and one in the Cu_B site. An increasing number of proteins are thought to be involved in the copper delivery and apparently there may be different proteins between prokaryotes and eukaryotes. The structures of the proteins represent a hint to understand the mechanism of each of them. We present here the structure of Cox17, which provides copper to Sco1 and Cox11 in eukaryotes. In prokaryotes the same role can be played by the Sco1 partner. Then the structures of Sco1 and Sco2, which provide copper to Cu_A site, will be discussed. Finally, we present the structure of Cox11, which is involved in delivering copper to Cu_B site. Possible biochemical pathways are discussed.