

PHOTOCHEMICAL ACTION AND STRUCTURAL FEATURES OF NON-COVALENT COMPLEX OF APOCYTOCHROME C AND APOMYOGLOBIN WITH FREE BASE HEMIN

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Cytochrome *c* is a heme protein with the prosthetic group covalently attached to the polypeptide chain. In this work, we describe the folding of apocytochrome *c* and apomyoglobin on free base hemin to form a non-covalent complex. The ability of the incorporated hemin to promote photooxidation of the polypeptide amino acid residues was also investigated. The free base hemin electronic absorption spectrum exhibits a broad Soret band peaking at 366 nm and structured Q band with peaks at 508, 540, 570 and 623 nm. The non-covalent complex exhibited red shift of the Soret band to 373 nm and of the Q bands peaks at 570 and 623 nm to 575 and 626 nm, respectively. These spectral changes are compatible with the location of the porphyrin in a more hydrophobic microenvironment supplied by the folded apocytochrome *c*. The folding was corroborated by far-UV Circular Dichroism measurements that showed increase of the θ at 222 nm after the incorporation. The non-covalent complex was also obtained with apomyoglobin. Both the non-covalent complex exhibited changes in the UV-visible spectra after irradiation due to the photochemical action of the hemin on amino acid residues. Supported by FAPESP, CNPq, FAEP-UMC.