ULTRAFAST DYNAMICS OF RESONANCE ENERGY TRANSFER IN MYOGLOBIN

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Myoglobin (Mb), a heme containing protein, is involved in the storage and release of ligands. We report here our recent studies of resonance energy transfer in Mb using an intrinsic tryptophan and the prosthetic heme as an energy transfer pair. With site-directed mutagenesis, we placed the single donor Trp into different helices. Utilizing the femtosecond up-conversion method, we characterized a series of energy transfer dynamics in Mb. The methodology developed here will be applied to study conformation dynamics of the E and F α-helices when ligand (CO) dissociation occurs.