Abstract

One part of my work focus on literature review on molten globule theme. This conformational state is generally formed in solution of some proteins under mild denaturation conditions as a thermodynamically stable state. Molten globule-like intermediate is also transiently formed during refolding of proteins. It is assumed and even it was proved for some proteins that kinetic (refolding) intermediate and equilibrium unfolding molten globule is identical.

The second part of my work presents conformational study of horse heart ferricytochrome c under acidic conditions in low and high ionic strenght (addition of 0,5 M sodium chloride). Cytochrome c is a mitochondrial protein which mediates electron transfer in respiratory chain. These conformational changes were monitored by UV/VIS and derivative spectrophotometry in four wavelength ranges of absorption spectra – aromatic amino acids absorption range, Soret band, Q-band and CT band. Under high ionic strength probably a molten globule state is stabilized in the pH range 1,90-2,60. However, under low ionic strength, changes in polarity of tryptophane and tyrosine residues vicinity (between pH 2,60 and 2,30) and in spin state of iron atom (around pH 2,10) were observed due to putative denaturation of the protein.

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