

STRUCTURAL MODIFICATIONS IN THE AMINO ACIDS L-LYSINE AND GLYCINE INDUCED BY LOW INTENSE VISIBLE LIGHT

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The amino acids L-Lysine monohydrochloride (L-Lys HCL) and Glycine L-лизин и in solution has been investigated using the highly sensitive FT-IR emission spectroscopy [1-2] as well as traditional UV/Vis electronic spectroscopy. UV photometric data show that the monomeric amino acid forms can self-assemble in water solution into the complex molecular structures which can be identified by the a characteristic peak near 270 nm in the absorption spectrum. However, exposure water solutions to moderate or low intense visible light may lead to photoinduced formation of colorless aggregates or nanosized structures, which like chromophores actively absorb UV-VIS light as well as fluoresce in the near UV and visible range.

FT-IR emission data show that under these experimental conditions the visible light initiates the protonation of charged carboxyl groups forms of amino acids as well as non-covalent intermolecular interactions between amino acids with water molecules. This may have important biological significance for function of the photosensitive and photoreceptor systems.

It would appear that caution should be exercised in using low-intense visible light to study the amino acids, taking into account the influence of visible light may have on their structures.

References.

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