

عنوان مقاله:

Effect of 3-beta-hydroxybutyrate on the formation of human serum albumin amyloid fibrils

محل انتشار:

بیستمین کنگره ملی و هشتمین کنگره بینالمللی زیستشناسی ایران (سال: 1397)

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خلاصه مقاله:

The overall flexibility of the protein influences on its biological function. Changing the structure of the normal protein prone to aggregation. Also, factors such as amino acid sequencing, mutation and environmental stresses, pH, temperature, anxiety, chemical species and oxidative agents lead to disruption of the protein structure, denaturation, aggregation, and consequently protein dysfunction. Glycation is one of the factors which results in a change in the protein structure and function and the production of the fibril. Formation of accumulated protein forms, especially fibrils and their toxic intermediates is the main cause of some diseases, such as Alzheimer s, Huntington s and Parkinson s diseases. In this study, the human serum albumin fibrillation process in the presence of 3-beta-hydroxybutyrate was studied in diabetic conditions. For this purpose, human serum albumin (HSA) with glucose and 3-betahydroxybutyrate was treated for a long time under physiological conditions. To evaluate the effect of 3-betahydroxybutyrate, circular dichroism spectroscopy, UV-Vis spectroscopy, fluorescence spectroscopy and atomic force microscopy were used. The results show that the structural changes of HSA and the sugar-protein proximity products decreased in the presence of 3-beta-hydroxybutyrate. Therefore, based on this study, 3-beta-hydroxybutyrate ketone body can play an inhibitory effect on fibrillation of human serum albumin protein and the disease control

کلمات کلیدی:

Fibril, 3-beta-hydroxybutyrate, Ketone body, Glycated human serum albumin

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