

## Abstract

Resistance of a protein against a denaturant agent is a useful property. In the current research, the domains thermal unfolding of glycated human serum albumin (GHSA) and human serum albumin (HSA) were studied under incubation at physiological conditions for 35 days. The domains thermal unfolding of GHSA and HSA were evaluated using differential scanning calorimetry (DSC), circular dichroism (CD), fourier transform infrared (FTIR) and UV–Vis spectroscopy. The results showed that the first energetic domain of GHSA remained after cooling back from 80 °C, while the first energetic domain of HSA disappeared at this temperature. Moreover, the second energetic domain of GHSA kept on after cooling back from 90 °C, but it disappeared in HSA at this temperate. Also, the secondary structure recovery after cooling back in GHSA was higher than HSA. Therefore, according to the obtained results, glucose can act as a stabilizer for HSA domains and can be used in food and pharmaceutical industries.

**Keywords:** Glycation, Proteins, Human serum albumin ,Diabetes, Thermal resistans protein, DSC, FTIR



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Faculty of Science  
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and investigation of glucose bond using FTIR

**Supervisor:**  
M. Ghaffarimoghaddam Dr.  
Dr. M. Bohlooli

**Advisor:**  
Dr. A.A. Moosavi-Movahedi  
Dr. Sh. Najafi

**Research by:**  
N.Poormolaie

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