

## Glycation of Serum Albumin: Cause Remarkable Alteration in Protein Structure and Generation of Early Glycation End Products

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**Abstract :** Glycation of protein is very important as well as a harmful process, which may lead to develop DM in human body. Human Serum Albumin (HSA) is the most abundant protein in blood and it is highly prone to glycation by the reducing sugars. 2-deoxy d-ribose (dRib) is a highly reactive reducing sugar which is produced in cells as a product of the enzyme thymidine phosphorylase. It is generated during the degradation of DNA in human body. It may cause glycation in HSA rapidly and is involved in the development of DM. In present study, we did in-vitro glycation of HSA with different concentrations of 2-deoxy d-ribose and found that dRib glycated HSA rapidly within 4h incubation at 37°C. UV Spectroscopy, Fluorescence spectroscopy, Fourier transform infrared spectroscopy (FTIR) and Circular Dichroism (CD) technique have been done to determine the structural changes in HSA upon glycation. Results of this study suggested that dRib is the potential glycating agent and it causes alteration in protein structure and biophysical properties which may lead to development and progression of Diabetes mellitus.

**Keywords :** 2-deoxy D-ribose, human serum albumin, glycation, diabetes mellitus

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