**Full Paper** _____ *Thematic Section:* Kinetics and Catalysis.
*Registration Code of Publication:* 12-30-6-94 *Subsection:* Biochemistry.
Publication is available for discussion in the framework of the on-line Internet conference "*Butlerov readings*".
http://butlerov.com/readings/
Contributed: July 18, 2012.

# Kinetic analysis of nonenzymatic glycosylation *in vitro* of the genetically engineered human insulin

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***Keywords:*** *kinetics, non-enzymatic glycosylation of proteins, insulin, stages of the process, rate constants of elementary reactions, thermodynamic constants of the equilibrium of stages.*

## Abstract

In the article we discuss the kinetics of the process of non-enzymatic glycosylation of insulin *in vitro* at about 4ºC and multiple excess of glucose over insulin. The process at the early stage of the development is clearly manifested in the form of combination of two phases with two-way character, the process in the quasi-equilibrium regime proceeding by the first stage. The rate constants of the forward and reverse elementary reactions of the second stage, as well as the thermodynamic equilibrium constants of both stages were defined. The equilibrium concentrations for all insulin-containing components of the process participants were revealed.