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Kseniia SokolovaUral Federal University and
Institute of Immunology
and Physiology, Russia

Co-Authors

**Irina Danilova^{1,2}, Irina Gette^{1,2},
Musa Abidov¹**¹Ural Federal University, Russia² Institute of Immunology and Physiology, Russia**Insulin-producing system in experimental diabetes mellitus and at modulation activity of macrophages**

Insulin-producing cells (IPC), located in pancreatic islets or solitary or at small clusters in acinar part of the pancreas or in pancreatic ducts, react under the conditions of experimental diabetes differently. Associated with the experimental diabetes damage of islets β -cells concern extra-islet insulin-producing cells in a lesser extent. We observed a correlation between increase in the quantity and functional activity of insulinocytes and modulation of macrophage activity.

Objective: to characterize quantity and functional activity of insulin-producing cells (IPC) of different localization in diabetic rats and after modulation activity of macrophages.

Materials and method: 20 Wistar adult rats were divided into 4 groups: 1 – intact control; 2 and 3 – 30 and 60 days of streptozotocin-induced diabetes correspondingly; 4 – 30 days of diabetes + injection of 3-aminophthalhydrazine derivatives, which modulate macrophage activity and reduce inflammation. Insulin-positive cells were detected by immunohistochemistry.

Results: At the experimental diabetes the part of extra-islet IPC in the total amount of IPC increases. Among extra-islet IPC number of cells with acinar localization is more than cells of ductal localization. Increase of square of solitary acinar IPC is, apparently, a compensatory of experimental diabetes.

At the modulation of macrophages activity quantity of ductal IPC and functional activity of IPC of all localization increase.

Future perspectives: The study of the mechanisms of the influence of macrophages on insulin-producing cells can be useful in the treatment of hyperglycemic conditions.

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Biography

Kseniia Sokolova entered PhD students courses at Ural Federal University in 2016. She is an assistant laboratory researcher at the Chair of Medicine Biochemistry and Biophysics of Ural State University and at the Laboratory of Biochemistry and Biophysics of Institute of Immunology and Physiology Ural Branch Russian Academy of Science. She is interested in diabetes and regeneration. Since 2016 she has published 8 papers and conference abstracts.

kssokolova@bk.ru

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