CORE
Metadata, citation and similar papers at core.ac.uk
Provided by Kazan Federal University Digital Repository

Cellular Transplantation and Tissue Engineering 2013 vol.8 N3, pages 113-115

C-kit and desmin-positive cells in expression in islets of pancreas during alloxan diabetes in rats.

Kaligin M., Plushkina A., Titova A., Titova M., Gumerova A., Kiassov A.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Nowadays there are findings that C-kit-positive and desmin-positive stellate cells help to regenerate endocrine part of pancreas. But still it is unknown about their role and the way of differentiation of these cells during pancreas regeneration. That's why the aim of our work was to study the dynamic of these cells population during alloxan diabetes in rats. The work was made on 33 rats with experimental diabetes. Blood glucose, insulin and glucagon levels were analyzed. Also the expression of desmin (marker of stellate cells), α-SMA (marker of myofibroblast), C-kit (marker of endocrine stem cells), insulin and glucagon (marker of differentiated α- And β-cells of Langerhans islets) was studied. The expression of desmin was found after one day of experimental diabetes in islets cells of pancreas. Maximum of these cells was after the third day of the experiment. Also after one day of the experiment C-kit-positive cells, which expressed insulin and glucagon were found. We suppose that stellate cells are the main factor of microenvironment for differentiation of C-kit-positive progenitor cells into β-cells through the stage of glucagon-positive cells because stellate pancreas cells can produce different growth factors and components of intercellular matrics. © Human stem cells institute, 2013.

Keywords

C-kit-positive cells, Diabetes mellitus, Pancreas, Regional stem cells, Stellate pancreas cells