Study of the effect of a thermostable protein complex isolated from the pancreas on GAD-positive and insulin-positive cells of the adult rat pancreas

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The effect of the pancreatic thermostable protein complex (TPC), a proliferation inhibitor, on the expression of GAD and insulin in the islets of Langerhans of adult rats has been studied. It has been shown in adolescent rats that injection of pancreatic PTC, the active component of which is the protein calmodulin, leads to a quantitative reduction in GAD-positive cells. Calmodulin plays an important role in the general functioning of pancreatic cells, although direct calmodulin-dependent regulation of GAD expression has not yet been fully studied.

Therefore, the aim of the work is to study the effect of pancreatic PTC on the expression of GAD and insulin in the pancreas of adult rats.

Based on the data obtained, it was determined that the action of pancreatic PTC increases the degree of GAD expression without a quantitative change in GAD-positive cells. Different results were obtained when detecting insulin antibodies. In this case, the effect of TPC on the number of insulin-positive cells is not observed, although insulin expression in the endocrine part of the adult pancreas is significantly reduced.

The results obtained suggest that:

1. The thermostable protein complex of the adult rat pancreas does not have the ability to change the number of terminally differentiated homologous cells in the islets of Langerhans.

2. The change in the intensity of staining for GAD and insulin antibodies without changing the number of cells in the islets of Langerhans of adult rats indicates a calmodulin-dependent regulation of the expression of these compounds..