

Abstract

Pancreas is divided into exocrine and endocrine tissue. The exocrine part contains acinar cells, which produce digestive enzymes, and ductal cells that help with their transportation to the duodenum. The islets of Langerhans form the endocrine part and consist of 5 types of cells; α , β , δ , ϵ , and PP-cells, producing hormones glucagon, insulin, somatostatin, ghrelin and pancreatic polypeptide, respectively. Pancreas development is divided into primary, secondary and tertiary transition. Many transcription factors participate in the cell specification and differentiation processes. Pancreatic duodenal homeobox 1 specifies the pancreatic domain in primary transition. Pancreas-specific transcription factor 1A is important for the specification and differentiation of acinar cells. All endocrine cell precursors express Neurogenin 3, a key specification factor of endocrine cells. A large number of transcription factors regulate differentiation of endocrine cells as well as their function. Absence or dysfunction of some transcription factors have been associated with pathologies, for example *diabetes mellitus*, pancreatic carcinoma or pancreatitis.

Key words

Pancreas, islets of Langerhans, insulin, glucagon, development, differentiation, diabetes