

【Noteworthy Patent Introduction #3】

Method for Producing Pancreatic Bud Cells

Abstract

Invented is a method for producing pancreatic bud cells comprising a step of culturing PDX1+ NKX6.1- cells, which may be induced from pluripotent stem cells, in a medium containing **KGF, EGF, and a BMP inhibitor**.

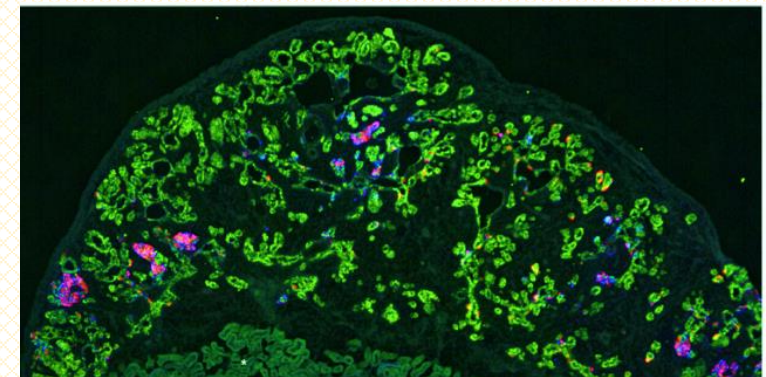
Advantage

- Culturing PDX1+ NKX6.1- cells in a medium containing **KGF, EGF, and a BMP inhibitor** enables an efficient production of pancreatic bud cells (PDX1+ NKX6.1+ cells), which may further be improved markedly with **aggregation cultures**.
- After implanted into immunocompromised mice, the human pancreatic bud cells could survive and differentiate into **functional mature β -cells** capable of **glucose-responsive secretion of insulin**.
- The invention may be applicable to the development of hESC/iPSC-based cell therapy and drug discovery for pancreatic diseases, such as diabetes.

Background

For a stable production of pancreatic bud cells from human pluripotent stem cells with a sufficient efficiency, there still have been difficulties to be resolved.

Pancreatic bud cells (green) formed tubular structures post implantation into mice



Red: insulin-secreting cells
Blue: glucagon-secreting cells

Patent Application : WO2015/178431 and WO2017/047797 invented by Kenji Osafune, et al.

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