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Regenerative medicine of pancreatic islets

Arutyunyan IV *et al*. Pancreatic islets

Irina V. Arutyunyan, Timur Kh. Fatkhudinov, Andrey V. Makarov, Andrey V. Elchaninov, Gennady T. Sukhikh

Abstract

The pancreas became one of the first objects of regenerative medicine, since other possibilities of dealing with the pancreatic endocrine insufficiency were clearly exhausted. The number of people living with diabetes mellitus is currently approaching half a billion, hence the crucial relevance of new

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Center for Regenerative Medicine - Islet ... - Mayo Clinic

https://www.mayo.edu/.../islet-regeneration

The islet regeneration researchers are taking multiple approaches to restore, protect and replace pancreatic islets. Coupling these efforts with basic science and clinical research aimed at understanding islet biology and diabetes, the Islet Regeneration Program at Mayo Clinic is poised to develop novel therapies for diabetes.

Islet Replacement | Islet Regeneration | Islet Protection | Islet Biolo

To address the islet dysfunction characteristic in diabetes, researchers in the Center for Regenerative Medicine are focused on generating pancreatic beta cells from stem cells and on re-creating the beta cells' normal cellular environment (islets of Langerhans).In addition to insulin-producing beta cells, the islets of Langerhans are composed of additional specialized cell types that are important for optimal functioning of the islet. Specialized islet cells include alpha cells, which produc...

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From Adult Pancreatic Islets to Stem Cells: Regenerative ...

https://www.sciencedirect.com/science/article/pii/B9780128098806000217

Pancreatic islet β cells synthesize the **hormone insulin**, which is fundamental for the control of glucose metabolism. β cells can be lost as the result of an autoimmune process, leading to type 1 diabetes (T1D), they can develop functional impairments in the context of insulin resistance (type 2 diabetes), or they can be impaired owing to genetic conditions compromising their development or function (monogenic ...

Author: Marta Pokrywczynska, Giacomo Lanzo... **Publish Year:** 2019

Regenerative medicine for insulin deficiency: creation of ...

https://www.ncbi.nlm.nih.gov/pubmed/20589399

Regenerative medicine for insulin deficiency: creation of pancreatic islets andbioartificial pancreas. Sumi S(1). Author information: (1)Institute for Frontier Medical Sciences, Kyoto University, Kyoto, Japan. sumi@frontier.**kyoto-u**.ac.jp. Recent advances in pancreas organogenesis have greatly improved the understandingof cell lineage from inner cell mass to fully differentiated β-cells.

Cited by: 18 **Author:** Shoichiro Sumi
Publish Year: 2011

Frontiers | Regenerative Medicine and Diabetes: Targeting ...

https://www.frontiersin.org/articles/10.3389/fendo.2018.00445

The **pancreatic endocrine** component is an interesting arena for **regenerative medicine** and **cell therapy**. Although in its early days, the evolution of TE/RM and the study of stem cell biology is leading to innovative treatments in the therapeutic field.

Cited by: 3 **Author:** Andrea Peloso, Andrea Peloso, Antonio Citr...
Publish Year: 2018

Regenerative medicine of the pancreatic β cells - Yamada ...

https://onlinelibrary.wiley.com/doi/full/10.1007/s00534-005-0983-2

Regenerative medicine of the **pancreatic** β cells. Satoko Yamada. ... In summary, **regenerative** processes of the **pancreas** observed in animal models in vivo are composed of four complex mechanisms. These are: (1) β cell neogenesis in residual **islets** (by intraislet progenitor cells or by dedifferentiation of somatostatin-expressing δ cells), (2 ...

Cited by: 15 **Author:** Satoko Yamada, Itaru Kojima
Publish Year: 2005

Regenerative Medicine: Pancreas Regeneration Flashcards ...

https://quizlet.com/213781480/regenerative...

-centroacinar cell (2nd cell type in the acinus) is responsible for fluid and electrolyte secretion by the pancreas Endocrine-accounts for only 2% of mass-Nests of cells - islets of Langerhans-4 major cell types:–alpha - glucagon secretion--beta - secrete insulin–delta - secrete somatostatin–F cell - secrete pancreatic polypeptide

Pancreatic Islets Regeneration: The Bioengineering Approach

https://www.sciencedirect.com/science/article/pii/B9780123985231000410

Alpha cells of the pancreatic islets secrete glucagon and **beta cells secrete insulin** . Both of these hormones coordinate fuel storage and utilization in the body . **Diabetes mellitus** is a metabolic disorder of the endocrine pancreas that fails to produce sufficient insulin to maintain glucose homeostasis .

Author: Timil Patel, Marcus Salvatori, Sij Hemal,... **Publish Year:** 2014

(PDF) Regenerative medicine for insulin deficiency ...

https://www.researchgate.net/publication/44853347...

Regenerative medicine for insulin deficiency: Creation of **pancreatic islets** and bioartificial **pancreas**. ... **pancreatic islets** and bioartificial **pancreas**.

Pancreatic Islets and Parathyroid Gland Co-transplantation ...

https://www.cirm.ca.gov/our-progress/awards/...

Co-transplantation of **parathyroid tissue** with **pancreatic islets** leads to dramatic improvement in **islet** survival and function after intramuscular transplant, which enables easy access and monitoring. **Unmet Medical** ...

Generation of Human Stem Cell-Derived Pancreatic Organoids ...

https://www.ncbi.nlm.nih.gov/pubmed/31025308

Apr 26, 2019 · Generation of Human Stem Cell-Derived Pancreatic Organoids (POs) for Regenerative Medicine. **Navarro-Tableros V**(1), **Gomez** Y(2), **Brizzi MF**(2), **Camussi G**(3)(4). Author information: (1)2i3T Società per la gestione dell'incubatore di imprese e per **il trasferimento tecnologico Scarl**, University of Turin, Turin, Italy.

Author: Navarro-Tableros, Gomez Y, Brizzi Mf, C... **Publish Year:** 2019

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Center for Regenerative Medicine - Islet ... - Mayo Clinic

www.mayo.edu/research/centers-programs/center-regenerative-medicine/focus …

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