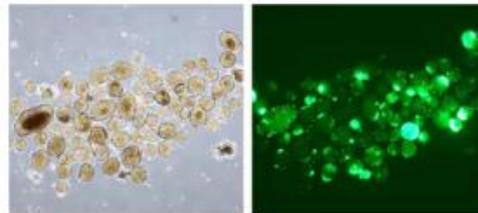
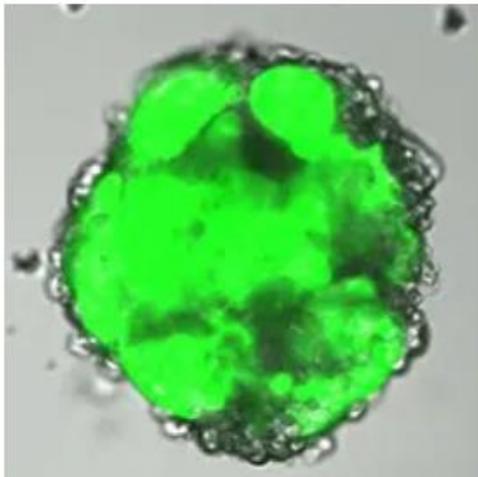


Transfection into Pancreas/Islets of Langerhans by Electroporation by Electroporation

The NEPA21 is the only device on the market to approach Electroporation from the perspective of optimising delivered energy.

- Compared to devices from other suppliers, the NEPA21 system offers the researcher a level of previously unavailable control over energy delivery to the electroporation target. This control is generated via unique electroporation pulse-output configurations, client-confirmed protocols and application-customised electrodes.
- With this market-leading control and (user-independent) reproducibility of the technique, it is now possible to apply electroporation techniques to applications previously considered too sensitive for electroporation methodologies.
- The finer control over the delivered energy offers specific and important advantages for Pancreas/Islets of Langerhans by Electroporation electroporation. As the thrust of NEPA21 protocols is to minimise delivered energy, this means that the targets are electroporated with less current (than competing device protocols).
- Only delivering the required energy (and no more) to porate the membrane is of utmost importance for viability post electroporation.
- The success of the NEPA21 for retina electroporation is evident by the Application and Publication information following.
- The NEPA21 system is supported by a suite of over 250 different electrode configurations, which further enhance the applicability of the system and empower researchers with further experimental options and opportunities.

APPLICATIONS**Ex Vivo Transfection Results of GFP Plasmids into Islets of Langerhans****PUBLICATIONS****Pancreas/Islets of Langerhans***Islets of Langerhans – Ex Vivo***[ELKS/Voltage-Dependent Ca²⁺ Channel-β Subunit Module Regulates Polarized Ca²⁺ Influx in Pancreatic β Cells](#)**

[Mica Ohara-Imaizumi, Kyota Aoyagi, Hajime Yamauchi, Masashi Yoshida, Masayuki X Mori, Yamato Hida, Ha Nam Tran Masamichi Ohkura, Manabu Abe, Yoshihiro Akimoto, Yoko Nakamichi, Chiyono Nishiwaki, Hayato Kawakami, Kazuo Hara, Kenji Sakimura, Shinya Nagamatsu, Yasuo Mori, Junichi Nakai, Masafumi Kakei, Toshihisa Ohtsuka](#)

[Cell Rep, 26 \(5\), 1213-1226.e7 2019 Jan 29](#)

Islets of Langerhans – Ex Vivo

Imaging of Insulin Exocytosis from Pancreatic Beta Cells.

Ohara-Imaizumi. et al.

Exocytosis Methods, Neuromethods Volume 83, 2014

Islets of Langerhans – Ex Vivo

Acute inhibition of PI3K-PDK1-Akt pathway potentiates insulin secretion through upregulation of newcomer granule fusions in pancreatic β -cells.

Aoyagi K. et al.

PLoS One. 2012;7(10):e47381.

Pancreas – In Vivo

In Vivo Piggy bac-Based Gene Delivery Towards Murine Pancreatic Parenchyma Confers Sustained Expression of Gene of Interest

Masahiro Sato, Emi Inada, Issei Saitoh, Shingo Nakamura, Satoshi Watanabe

Int J Mol Sci, 20 (13) 2019 Jun 26

Pancreas – In Vivo

Administration of Gemcitabine After Pancreatic Tumor Resection in Mice Induces an Antitumor Immune Response Mediated by Natural Killer Cells

Engin Gürlevik, Bettina Fleischmann-Mundt, Jennifer Brooks, Ihsan Ekin Demir, Katja Steiger, Silvia Ribback, Tetyana Yevesa, Norman Woller, Arnold Kloos, Dmitrij Ostroumov, Nina Armbrecht, Michael P Manns, Frank Dombrowski, Michael Saborowski, Moritz Kleine, Thomas C Wirth, Helmut Oettle, Güralp O Ceyhan, Irene Esposito, Diego F Calvisi, Stefan Kubicka, Florian Kühnel

Gastroenterology, 151 (2), 338-350.e7 Aug 2016

Pancreas – In Vivo

Multiplexed pancreatic genome engineering and cancer induction by transfection-based CRISPR/Cas9 delivery in mice.

Maresch R, Mueller S, Veltkamp C, Öllinger R, Friedrich M, Heid I, Steiger K, Weber J, Engleitner T, Barenboim M, Klein S, Louzada S, Banerjee R, Strong A, Stauber T, Gross N, Geumann U, Lange S, Ringelhan M, Varela I, Unger K, Yang F, Schmid RM, Vassiliou GS, Braren R, Schneider G, Heikenwalder M, Bradley A, Saur D, Rad R

Nat Commun. 2016 Feb 26;7

Pancreas – In Vivo

Site-targeted non-viral gene delivery by direct DNA injection into the pancreatic parenchyma and subsequent in vivo electroporation in mice.

Sato M, Inada E, Saitoh I, Ohtsuka M, Nakamura S, Sakurai T, Watanabe S

Biotechnol J. 2013 Aug 15. [Epub ahead of print]

Pancreas – In Vivo

Injection site-dependent induction of immune response by DNA vaccine: comparison of skin and spleen as a target for vaccination.

Guan X1, Nishikawa M, Takemoto S, Ohno Y, Yata T, Takakura Y

J Gene Med. 2010 Mar;12(3):301-9.