

Transfection into Mouse-Rat: LUNG / SPLEEN / LIVER / KIDNEY / STOMACH / INTESTINE 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 LUNG / SPLEEN / LIVER / KIDNEY / STOMACH / INTESTINE 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**Transfection into Mouse-Rat: LUNG / SPLEEN / LIVER / KIDNEY / STOMACH / INTESTINE by Electroporation**

For more specific application information, please email us at: sales@sonidel.com

Stomach**Somatic mouse models of gastric cancer reveal genotype-specific features of metastatic disease**

Leibold J, Tsanov KM, Amor C, Ho YJ, Sánchez-Rivera FJ, Feucht J, Baslan T, Chen HA, Tian S, Simon J, Wuest A, Wilkinson JE, Lowe SW.

Nat Cancer. 2024 Feb;5(2):315-329.

Liver**EP4 receptor-associated protein (EPRAP) regulates gluconeogenesis in the liver and is associated with hyperglycemia in diabetic mice**

Higuchi S, Fujikawa R, Nakatsuji M, Yasui M, Ikedo T, Nagata M, Mishima K, Irie K, Matsumoto M, Yokode M, Minami M

Am J Physiol Endocrinol Metab. 2019 Mar 1;316(3):E410-E417.

Liver**Necroptosis microenvironment directs lineage commitment in liver cancer.**

Seehawer M, Heinzmann F, D'Artista L, Harbig J, Roux PF, Hoenicke L, Dang H, Klotz S, Robinson L, Doré G, Rozenblum N, Kang TW, Chawla R, Buch T, Vucur M, Roth M, Zuber J, Luedde T, Sipos B, Longerich T, Heikenwälder M, Wang XW, Bischof O, Zender L.

Nature. 2018 Oct;562(7725):69-75.

Lung**Stable Somatic Gene Expression in Mouse Lungs Following Electroporation-mediated Tol2 Transposon Delivery.**

Muliawan HS, Nakayama K, Yagi K, Ikeda K, Yagita K, Hirata K, Emoto N

Kobe J Med Sci. 2015 Oct 7;61(2):E47-53.

Liver**Adjuvant gemcitabine therapy improves survival in a locally induced, R0-resectable model of metastatic intrahepatic cholangiocarcinoma**

Gürlevik E, Fleischmann-Mundt B, Armbrecht N, Longerich T, Woller N, Kloos A, Hoffmann D, Schambach A, Wirth TC, Manns MP, Zender L, Kubicka S, Kühnel F.
Hepatology. 2013 Sep;58(3):1031-41.

Intestine**Estrogen-dependent regulation of sodium/hydrogen exchanger-3 (NHE3) expression via estrogen receptor β in proximal colon of pregnant mice**

Choi Jookhuu N, Sato Y, Nishino T, Endo D, Hishikawa Y, Koji T.
Histochem Cell Biol. 2012 May;137(5):575-87.

Spleen**Inhibition of nuclear delivery of plasmid DNA and transcription by interferon γ : hurdles to be overcome for sustained gene therapy.**

Zang L, Nishikawa M, Machida K, Ando M, Takahashi Y, Watanabe Y, Takakura Y.
Gene Ther. 2011 Sep;18(9):891-7.

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

Guan X et al.
The Journal of Gene Medicine, Volume 12, Issue 3, Pages 301-309, March 2010

Liver**Reduction of fibrosis in a rat model of non-alcoholic steatohepatitis cirrhosis by human HGF gene transfection using electroporation.**

Kiyama S, Yamada T, Iwata H, Sekino T, Matsuo H, Yoshida N, Miyahara T, Umeda Y, Matsuno Y, Kimura M, Matsumoto K, Nakamura T, Takemura H.
J Gastroenterol Hepatol. 2008 Aug;23(8 Pt 2):e471-6.

Liver**Deubiquitylation of histone H2A activates transcriptional initiation via trans-histone cross-talk with H3K4 di- and trimethylation**

Nakagawa T, Kajitani T, Togo S, Masuko N, Ohdan H, Hishikawa Y, Koji T, Matsuyama T, Ikura T, Muramatsu M, Ito T.
Genes Dev. 2008 Jan 1;22(1):37-49.

Liver**Stabilizing of plasmid DNA in vivo by PEG-modified cationic gold nanoparticles and the gene expression assisted with electrical pulses.**

Kawano T, Yamagata M, Takahashi H, Niidome Y, Yamada S, Katayama Y, Niidome T.
J Control Release. 2006 Apr 10;111(3):382-9.

Liver**Hepatocyte-targeted gene transfer by combination of vascularly delivered plasmid DNA and in vivo electroporation.**

Sakai et al.
Gene Therapy, Volume 12, Issue 7, Pages 607-616, April 2005

Kidney

Local actions of endogenous angiotensin II in injured glomeruli

Ma J, Matsusaka T, Yang H, Kawachi H, Shimizu F, Isaka Y, Imai E, Kon V, Ichikawa I.

J Am Soc Nephrol. 2004 May;15(5):1268-76.

Kidney

Direct transfer of hepatocyte growth factor gene into kidney suppresses cyclosporin A nephrotoxicity in rats

Yazawa K, Isaka Y, Takahara S, Imai E, Ichimaru N, Shi Y, Namba Y, Okuyama A.

Nephrol Dial Transplant. 2004 Apr;19(4):812-6.