

TECHNOLOGY PRESENTATION

Endoscopic Electroporation of Tissue - a novel minimally invasive surgical technique

TECHNOLOGY SUMMARY

A device to conduct minimally invasive reversible and irreversible electroporation of tissue via endoscopy.

The technology consists of a device/instrument and a method for electroporation, and can be used within gastroscopy, bronchoscopy, cystoscopy, and colonoscopy among others.

APPLICATIONS

Electroporation is a biomedical technique in which an electric field is shortly applied to cells or tissues to momentarily cause increased cell permeability.

Reversible electroporation:

The electric field is below an electric field threshold in order to increase the permeability of the cell membrane, allowing chemicals, drugs or DNA to be introduced into the cell. Reversible electroporation preserves cell viability by enabling the cell to repair after the treatment.

Irreversible electroporation:

The electric field is greater than the electric field threshold, and creates permanent nanopores in the cell membrane, disrupting the cellular homeostasis. As a consequence, the cell dies by apoptosis.

CURRENT STATE

Different prototypes have been developed by inventors during 2015 and 2016.

The current prototype is believed to include the features required for a commercial product.

COMMERCIAL PERSPECTIVES

In vivo electroporation in humans is typically performed using needle electrodes that are inserted into the tissue of interest, for example a cancer lesion under adjuvant treatment.

A device for reversible electroporation is the Cliniporator system. A device for irreversible electroporation is the NanoKnife system. Both systems use sharp needles or spear-like electrodes.

Our technology enables minimally invasive reversible and irreversible electroporation of tissue by combining a device with an endoscope.

Our technology enables electroporation treatment within among others the intestinal tract, the urinary tract and the upper and lower airways which are currently not safely accessible with electroporation technology.

The unit cost of the technology offered is believed to be disruptively lower than current electroporation technologies and represents an opportunity to expand the electroporation technology from specialized hospital units (today) out into peripheral medical clinics.

INTELLECTUAL PROPERTY RIGHTS

The technology is protected in a priority patent application filed in 2016.

BUSINESS OPPORTUNITY

We are looking for a company interested in licensing the technology.

KEY INVENTORS



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