In-Vivo Electroporator
CUY21VIVO-SQ

Revolutionary and innovative technology for in vivo electroporation

Applications

- **In ovo electroporation**
  Neural tube / Lim bud / Mesencephalon / Optic vesicle etc.
- **In utero electroporation**
  Spinal cord / Hippocampus / Cortex / Telencephalon etc.
- **Ex vivo electroporation**
  Mouse's brain slice / Mouse embryo / Mouse embryo's gonad / Mouse's small intestin etc.
- **In vivo electroporation**
  Mouse : Muscle / Brain / Skin
  Rat : Knee joint / Retina / Kideny
  Zebrafish : Fin / Retina
  Honey bee : Brain
  Planerian : Eye
  Xenopus : Embryo
- **Electrochemotherapy**
  Chondrosacroma

Features

Impedance measurement

Impedance measurement function is unique feature and enables a researcher to measure the impedance prior to electroporation. Under in vivo experiment, many factors change every experiment.
The fluctuation in physical factors such as distance between electrodes and sample volume etc. affects resitance and current.The current is higly related to the reproduciblity of in vivo electroporation. Since the resistance and current are interrelated, the impedance value (resistance) is an important indication in in vivo electroporation. With this function, one is allowed to check the impedance (resistance) before running an electroporation program and adjust it by moving the positon of electrodes slightly if it is far away from previous value.

Low current measurement

CUY21VIVO-SQ has the current measuremnet function that measures and displays the actual current immediately after electroporation. The current value is crucial data and helps a resercher to verify the process of electroporation in an electrical aspect. The current measurement function is improved and the minimum current to be measured is extended to 1mA.
The capability enables the in vivo electroporation with very sensitive target such as adult mouse's brain in which the current must be below 10mA. More applications can be done without any extra devices.

Low voltage control

In in-vivo electroporation, the required voltage is below 100V. Since CUY21VIVO-SQ is designed for in-vivo electroporation, the accuracy of the voltage below 100V is very high due to the narrow voltage range. The voltage of CUY21Vivo-SQ can be set from 0.1V to 99.9V in 0.1V increment.
The low voltage control is required for the electroporation with a single cell.

Safety function

As the conductive part of an electrode for in vivo electroporation is exposed and a resarcher often grabs an electrode by hand in in vivo electroporation, there is possiblity that a researcher touches it during electroporation accidentally and gets injured seriously. In order to avoid such a tragedy, the safety function is built in CUY21Vivo-SQ and turns off the electroporation program automatically when the current gets beyond the limit.

Easy operation

CUY21VIVO-SQ carries seven independent LED displays and numberical keys.
Each electroporation parameter is shown at its own LED display. The program settings and edit measured values can be checked at a glance.
The numberical keys also make it easy for a resarcher to make and edit a program.

Electrodes

In ovo electroporation

Chopstick electrode

For ectoderm (neural tube)

How to read a catalog number

LF611P3-1
- Length of conductive tip
- Length of bent part
- Platinum coating

Electrode list

LF611P3-1
LF611P7-2
LF611P7-4 (picture)
LF611P7-5
LF611P8-2

Z-shape chopstick electrode

For mesoderm and endoderm

How to read a catalog number

LF613P3
- Length of conductive tip
- Platinum coating

Electrode list

LF613P1
LF613P2
LF613P3(picture)
LF613P5

Tungsten needle electrode & holder

How to read a catalog number

LF614T
- T : tungsten
- S: Stainless steel

Electrode list

LF614T (picture)
LF614S
LF615C Electrode holdr

Electrode holder

LF580 (for LF611 and LF613 series)

In vivo electroporation

Tweezers with disk electrodes

For mouse embrryo, muscle, thestis, retina, skin and zebra fish's fin etc.

How to read a catalog number

LF650P5
- Diameter of a disk electrode
- P : Platinum coating
- S : Stainless steel

Electrode list

LF650P1
LF650P3
LF650P5 (picture)
LF650P7
LF650P10
LF650S5
LF650S7
LF650S10

Paralell fixed needle electrodes

For muscle

How to read a catalog number

LF560S5
- Distance between electrodes
- Stainless steel

Electrode list

LF560S5 (picture)
LF560S10
LF560S15

Ex vivo electroporation

Petridish type electrode & Rod type electrode

For sliced tissue

How to read a catalog number

LF701P10E
- E : Petridish type electrode
- L : Rod type electrode
- Diameter or square
- Platinum
- 1 : Square electrode
- 0 : Disk electrode

Electrode list

LF700P2E
LF700P3E
LF700P4E
LF700P5E
LF700P7E
LF700P10E
LF700P20E
LF700P1L
LF700P2L
LF700P3L
LF700P5L
LF700P7L
LF70010L
LF700P20L
LF701P2E
LF701P5E
LF701P7E
LF701P10E
LF701P20E
LF701P2L
LF701P3L
LF701P5L
LF701P7L
LF701P10L
LF701P20L

Bath type electrode

For mouse embrryo and extracted organ

How to read a catalog number

LF520P5
- Distance between plate electrodes
- Platinum

Electrode list

LF520P5 (picture, L8 x H3mm plate)
LF520P15 (L10 x H5mm plate)
LF520P20 (L20 x H8mm plate)
LF520P25 (L20 x H8mm plate)

There are more kinds of electrodes available and an electrode can be customized. Please kindly contact us.

Specification

DC wave form	Square	Current limit *	1.60A
Impedance measurement range	30ohms – 35Kohms	Voltage measurement range	0.1 – 99.9V
Voltage range	0.1 – 99.9V (0.1V increment)	Current measurement range	0.001 – 1.60A When measured current < 1.00A, 1mA resolution When measured current ≧ 1.00A, 10mA resolution
Pulse length	0.05 – 99.9msec (0.01msec increment)		
Pulse interval	0.1 – 999msec (0.1msec increment)	Power	115V or 220V 250VA 50/60Hz
No. of pulse	1 – 99 pules	Dimensions	W360cm x L380cm x H180cm
Storage	99 programs	Weight	12.3Kg

* Safety function. When current excees the limit, the electroporation program is turned off automatically..

BEX

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