

CUY21Vivo-SQ

In vivo electroporator



Target sample

- **In vivo**
Rat • Mouse : Liver • Pancreas • Kidney • Brain • Thigh • Retina
Articular tissue • Testis • Ovary • Vagina • Skin etc.
Zebrafish : Fin • Retina
Others : Hatched chick' s brain • Honey bee' s brain
Cricket' s embryo • Xenopus embryo • Medaka' s embryo
- **In utero**
Rat • Mouse : Ventricle • Inner ear • Spinal cord
- **Ex vivo**
Hippocampus • Mouse embryo (whole culture embryo)
Blood vessel • Chick embryo' s guts
- **In ovo**
Ectoderm • Endoderm • Mesoderm • Neural tube

Features

Resistance measurement

The resistance measurement function is built in CUY21Vivo-SQ and enables one to measure the resistance value of a biological sample prior to electroporation. The most important value in in-vivo electroporation is current. As long as current value is in the optimal range, DNA, siRNA and other molecules are introduced into a cell. As physical conditions such as a gap between electrodes, location of electrodes and volume of a sample vary, resistance value also changes considerably every experiment. According to Ohm's law, current and resistance value are interrelated and affect one another. It is necessary to adjust resistance value in order to put current value in the optimal range. With a resistance measurement function, before an electroporation program is run, resistance value can be measured and adjusted to put current value in the optimal range. High reproducibility will be achieved.

Actual current measurement

Actual current value can be measured and displayed immediately after an electroporation is completed. There is the optimal current value for each application. It is possible to verify the electroporation process electrically by checking the actual current value. Even though a result of an electroporation turns out to be failure, as the electroporation process is already verified electrically, the cause of a failure can be identified easily.

Various applications

CUY21Vivo-SQ can be used for applications requiring low voltage as voltage can be set from .1V in .1V increment. In addition, sensitive electroporations (i.e. electroporating adult mouse's brain) whose optimal current is below 10mA can be carried out without any extra devices as the current measurement range of CUY21Vivo-SQ is from 1mA.

High voltage accuracy

The accuracy of the voltage around 50V is very high as the voltage range is restricted to 99.9V and CUY21Vivo-SQ is strictly calibrated to the voltage range where in vivo electroporation is usually carried out. While the fluctuation in voltage affects an electroporation result greatly, with CUY21Vivo-SQ, such an influence can be ignored.

Safety limit function

A safety limit function is built in CUY21Vivo-SQ. There is risk of getting injured by accident during electroporation as a conductive part of an electrode for in vivo electroporation is exposed and it is grabbed in hand in in vivo electroporation. A safety limit function is useful to prevent such an incident as the function stops the running program immediately after the actual current gets beyond the limit.

Specification

DC waveform	Square wave	Maximum current*	1.60A
Resistance measurement range	30ohms ~ 35Kohms	Voltage measurement range	0.1 ~ 99.9V
Voltage	0.1 ~ 99.9V (0.1V increment)	Current measurement range	0.001 ~ 1.60A Actual current < 1.00A, 1mA resolution Actual current ≥ 1.00A, 10mA resolution
Pulse length	0.05 ~ 99.9msec (0.01msec increment)		Power
Pulse interval	0.1 ~ 999msec (0.1msec increment)	Dimensions	W360mm x D380mm x H180mm
No of pulse	1 ~ 99	Weight	12.3Kg
Memory	Max. 99 programs		

*When actual current exceeds the maximum current, the safety limit function stops the running program immediately.

* Product specifications are subject to change without notice