CUY21EDITII

True successor to our long-selling in vivo electroporator CUY21EDIT

All-in-one machine that meets all the demands of electroporation methods from cultured cells to zygotes, living tissues and organs

Features

Constant Current Pulse Mode *1

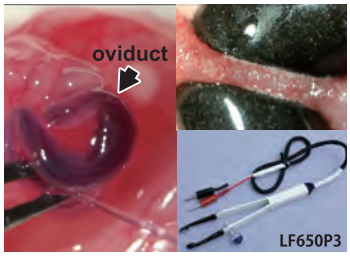
When performing electroporation directly on living tissue (in vivo electroporation), one of the factors that determines its success or failure is the magnitude of the current flowing through the sample. However, with conventional equipment, the current value of the output pulse cannot be set automatically, and it was necessary to calculate the required voltage value from Ohm's law (E = IR) after measuring the electrical resistance of the sample. Even if the voltage value is set by the above method, the position of the electrodes and/or the distance between the electrodes change during in vivo electroporation, and the electrical resistance often changes accordingly. It was therefore extremely difficult to output the electric pulse of constant current.
CUY2EDITII is equipped with a novel mode for setting current values (constant current mode) as well as the conventional mode for setting voltage values (constant voltage mode). Using the constant current mode, it is expected that highly reproducible experimental results can be obtained without manually changing the voltage value according to the size and shape of the sample.

All - in - one

CUY21EDITII can generate all the pulse waveforms that our existing models (CUY21EDIT, CUY21Vitro-EX) can generate, and therefore, can be used for a wide variety of purposes.

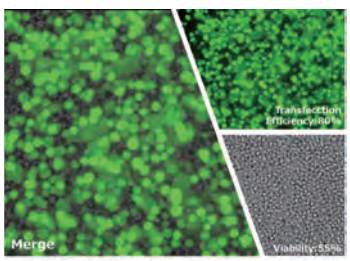
In vivo

In utero

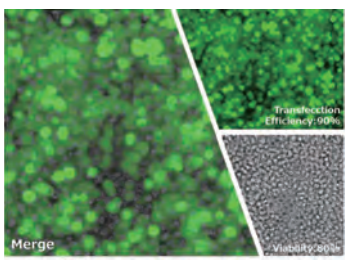


***i* - GONAD**

In vitro



primary mouse mast cell (BALB/c)



HL60 cells

*1 JP6518971B2

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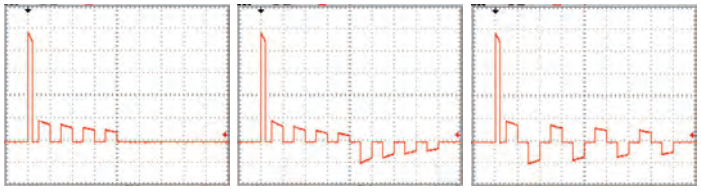
In vivo & In vitro Electroporator

Features

Wide variety of pulse patterns available

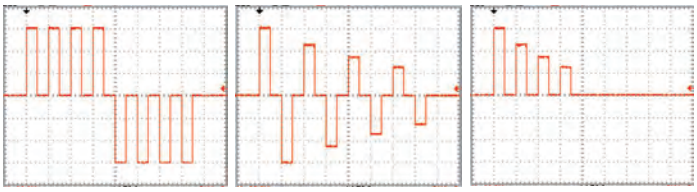
CUY21EDITII is equipped with output power supplies individually according to the pulse types, and can output all the pulse waveforms that conventional models of the CUY21 series can output. In addition, various pulse patterns can be set, such as a mode in which polarity switching is performed alternately (ALT mode) and a mode in which output voltage or current values can be attenuated arbitrarily for each pulse (Decay mode) (see the figures below).
It is also possible to individually generate different waveform patterns as needed, such as for electrical stimulation of cells and tissues (optional).

Example of dual pulses (driving pulse: decay)



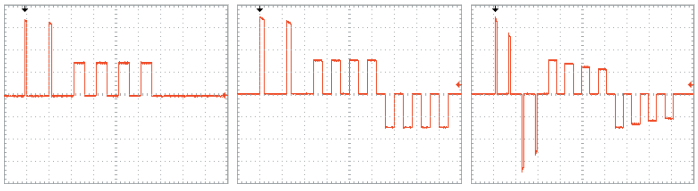
Pp → Pd(+) Pp → Pd(+/-) Pp → Pd(ALT)

Example of square pulses (constant current or constant voltage)



Pd(+/-); Decay 0% Pd(ALT); Decay 25% (Log) Pd(+/-); Decay 25% (Log)

Example of Decay + Square pulses

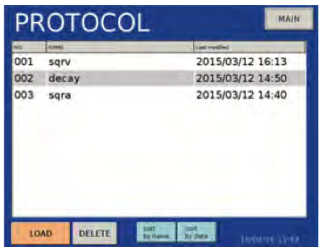


PLPp → Pd(+) PLPp → Pd(+/-) PLPp → Pd(+/-); Decay 10%

Example of the pulses CUY21EDIT II outputs

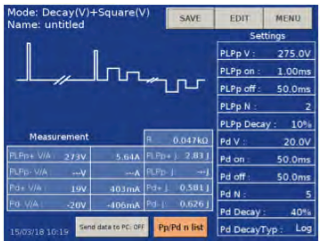
Saving protocols (electrical conditions)

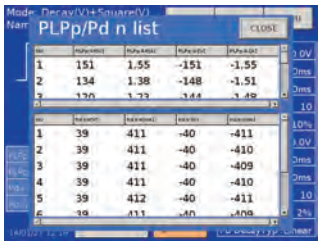
The created pulse patterns can be saved in the main unit of CUY21EDITII as a protocol.
Each protocol can be given an arbitrary name using the on-screen keyboard.
The saved protocols can be called from PROTOCOL so that you can move on to your experiment smoothly.
The settings of the saved protocols can also be changed and overwrote.

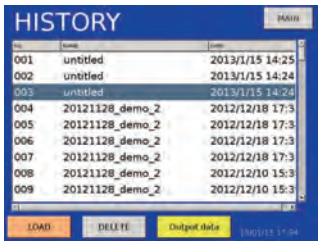


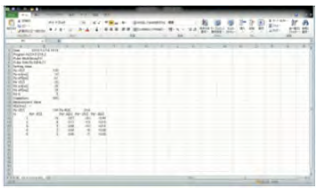
All executed values recorded, displayed and output

The history of pulse settings and outputs for the last 100 outputs is automatically saved in the main unit. Not only can you check on the screen from HISTORY, but you can also save the data to your computer via USB.





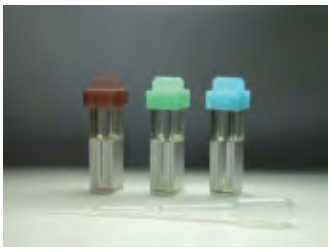




Accessory

Cuvette holder SE-3

Cuvette electrode



Cat no	Description	Capacity	Cap color
SE-201	1mm gap cuvette 50 pcs/bag	20 ~ 80µl	Brown
SE-202	2mm gap cuvette 50 pcs/bag	40 ~ 400µl	Green
SE-204	4mm gap cuvette 50 pcs/bag	200 ~ 800µl	Blue

A disposal pipette is included in each cuvette.

* Product specifications are subject to change without notice

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In vivo & In vitro Electroporator

Features

Compact design taking up less space

Following the design of CUY21EDIT, the width and the height have been reduced by ~40% and ~20%, respectively. It has a compact size and shape that easily fits not only on a laboratory bench but also on a wagon.

Large-sized touch panel adopted

CUY21EDITII is equipped with a 5.7-inch touch panel for inputting set values. The waveform pattern is displayed as a graphic, so you can intuitively understand the input pattern. In addition, the numeric keypad screen popping up when entering the set value makes the data entry tasks easy.

CUY21EDIT II・FRONT

CUY21EDIT II・REAR

Specifications

Pulse	Poration pulse (Pp, PLPp)		Driving pulse (Pd)
Pulse waveform	Decaying pulse (ON/OFF)		Decaying or Square pulse
Voltage range	Pp: 1-400V in increments of 1V PLPp: 1-350V in increments of 1V		1-350V for decaying pulse in increments of 1V 1-200V for square pulse in increments of 1V
Current range	1-2000 mA in increments of 1mA: available in square-pulse Pd only		
Pulse width	0.01-99.9 msec		0.05-1000 msec
Pulse interval	0.05-99.9 msec (*1)		0.05-1000 msec (*2)
Number of pulses	Pp: 1, PLPp: 1-10		1 - 1000
Pulse mode of Pd	Pd(+): same polarity as Pp, Pd(-): reverse polarity of Pp (available only when Pp in on) Pd(+/-): set numbers of Pd(+) and then set numbers of Pd(-) Pd(ALT): set numbers of alternate pairs of a Pd(+) and a Pd(-)		
Range of decay rate in Pd	Decaying pulse mode: available by selecting condenser capacity (3.3-1416.3μF) Square pulse mode: 0-99% in increments of 1%		
Measurement range of resistance	up to 39kΩ		
Measurement range of applied voltage	-512V - +512V in increments of 1V		
Measurement range of impressed current	Decaying pulse: -10.23 - +10.24A in increments of 0.01A Square pulse: -1023 - +1024mA in increments of 1mA		
Number of memorable programs	>20000	History of applied pulses	Last 100 patterns (sequentially overwrote)
Power unit	Single-phase 100V; 400VA; 50/60Hz		
Dimensions/Weight	240mm(W)-380mm(D without projections) -190mm(H without rubber foot), 9kg		

*1: interval between poration pulses and driving pulses
*2: Minimum pulse interval will be 0.01msec when decaying pulse is selected.

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