

Electro cell fusion generator LF301

Versatile and reliable



Cell fusion

Nuclear transfer (cloning)

Oocyte activation

Advantages of electro fusion against PEG

- No toxicity
- No skill requirement
- High through put
- High reproducibility

Features

1 Resistance measurement

LF301 has the resistance measurement function that allows one to check the resistance of the buffer prior to cell fusion. It is necessary to align two different kinds of cells to be fused into a line. However, if the ion concentration of the buffer is too high, ions will cause the water stream which disturbs the cell alignment called "Pearl chain". With the resistance measurement function, one can confirm the ion concentration and is able to adjust it to the appropriate level if necessary. It ensures the cell alignment. This function is also useful when the same experiment is carried out repeatedly. Since the ion concentration can be adjusted to the same level every experiment, the reproducibility increases.

2 AC/DC interval

In the process of electro cell fusion, alternating current is used to make a pearl chain, a line of cells and then DC pulses follow. Since DC pulses should be applied before a pearl chain falls apart, the interval between AC and DC has to be minimized. LF301 can shift from AC to DC in 5usec. The short interval ensures that DC pulses can be applied while cells to be fused are in physical contact.

3 Bipolar mode

There are two different DC pulse modes available. One is normal mode in which DC pulse is in one direction and the other is bipolar mode in which the pole of DC pulse is switched to the opposite direction during a pulse.

4 Manual mode

An electro cell fusion protocol can be programmed and DC pulses are generated automatically. The program helps one to carry out the routine works efficiently. DC pulses can be applied manually. In addition, AC voltage is also changed manually during the cell alignment. As the manual mode allows one to apply DC pulses while one is observing with a microscope, it is useful for the fusion of unknown cells and nuclear transplantation.

5 PC control

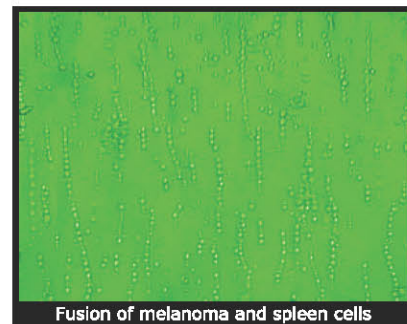
LF301 can be controlled through Windows Vista compatible software and a cell fusion program can be entered and edited through PC. Each program can create a text file in which experiment time/date, resistance data and parameters can be saved..The program number is assigned as a file name.

6 Post-fusion

LF301 offers two different types of post-fusion AC current. One is standard AC current whose amplitude is constant. The other is the fade-out AC current whose amplitude is decreasing gradually.

7 Easy operation

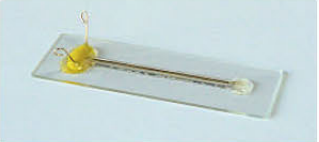

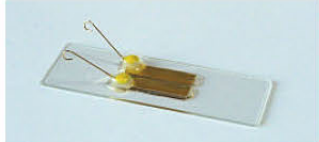
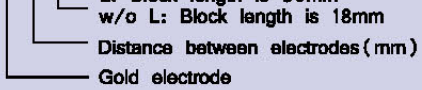
The diagram of the cell fusion process is shown on a control panel. Each parameter of a cell fusion program is indicated on the diagram and carries its own LED light which is turned on when the parameter is selected. The diagram with LED indicators helps one to understand which parameter is selected and can be edited.




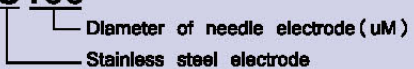
Fusion of melanoma and spleen cells

Electrodes

Cell fusion


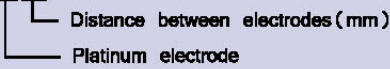
		How to read a catalog number	Electrodes
LF500 series Gold wire electrode 		LF500G1  Distance between electrodes (mm) Gold electrode	LF500G0.5 LF500G1 (picture) LF500G2
LF501 series Gold block electrode 		LF501G1L  L: Block length is 50mm w/o L: Block length is 18mm Distance between electrodes (mm) Gold electrode	LF501G0.5 LF501G1 (picture) LF501G2 LF501G1L LF501G2L

Nuclear transfer (Cloning)

		How to read a catalog number	Electrodes
LF5100 series Chopstick type electrode 		LF5100S100  Diameter of needle electrode (μm) Stainless steel electrode	LF5100S10 LF5100S25 LF5100S50 LF5100S100 (picture) LF5100S150

Electrode selection	Species	Recommended electrodes
	Mouse	LF5100S10/LF5100S25/LF5100S50
	Dog/Cat/Bovine/Porcine	LF5100S100

Oocyte activation

		How to read a catalog number	Electrodes
LF5000 series Petridish type electrode 		LF5000P1  Distance between electrodes (mm) Platinum electrode	LF5000P0.5 LF5000P1 (picture) LF5000P2

Specification

A	Wave form	Sine wave	
	Voltage	0-75Vrms in 1V resolution	
	Frequency	1MHz	
	C	Duration	Pre-fusion 0-100sec in 1sec resolution Post-fusion 0-10sec in 1 sec resolution
		Post-fusion AC mode	Normal/fade-out mode*
		Shunt resistor	> 50 ohms

* In normal mode, AC amplitude is constant. In fade-out mode, AC amplitude decreases.

D	Wave form	Normal mode positive(+)square wave Bi-polarity mode bi-polar(+/-)square wave	
	Voltage	0-1200V in 1V resolution	
	C	Pulse length	0-100usec in 1usec resolution
		Pulse interval	0.1-10sec in 0.1sec resolution
		No. of pulses	1-100 pulses
		Output	Auto or manual

Miscellaneous

Resistance measurement	30ohms-35Kohms	Power	100-240V 200VA 50/60Hz
AC/DC interval	< 5usec	Dimensions	W360mm x L380mm x H180mm
Storage	99 programs	Weight	11Kg

BEX

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