



威尼德生物科技（北京）有限公司
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> Twin waveform all-purpose electroporator Gene Pulser X2



- Description
- Working principle
- Performance and Advantages
- Configuration parameter
- Application area





Dual wave all-around electroporation instrument

Gene Pulser X2

High precision pulse transmission

Pre pulse sampling resistance measurement

Multi-functional dual wave generator

High transfection efficiency polarity conversion

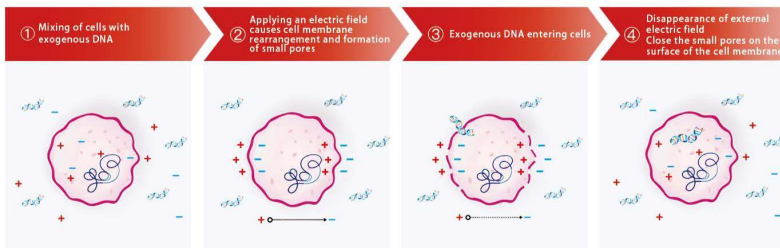
Real time monitoring of arc protection

Product Description

Gene Pulser X2 Dual-Wave Universal Electroporation system, with an integrated design concept, combines square wave and exponential wave, and is a high-precision dual-wave electroporation system.

Electroporation is an efficient technique that utilizes the electric field strength and pulse time provided by it to introduce nucleic acids, proteins, and other molecules into various cells. By applying a high-intensity electric field, the permeability of the cell membrane is instantly increased, thereby absorbing exogenous molecules from the surrounding medium. This technology can introduce nucleotides, DNA and RNA, proteins, sugars, dyes, and viral particles into prokaryotic and eukaryotic cells. Compared to other conversion methods, the electroporation method does not use any chemical reagents, has low toxicity, is easy to operate, and has high transfection efficiency and survival rate. It is an effective alternative method. Widely used in all cell types including animal and plant cells, bacteria/yeast, stem cells, protoplast cells, nuclear transfer, mammalian cells, etc.

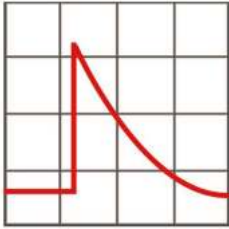
Working Principle



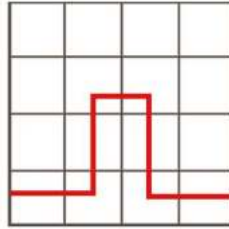
Performance and Advantages

■ Square wave and exponential wave modes

Ensure that all cell types (prokaryotic and eukaryotic) can achieve optimal electroporation results



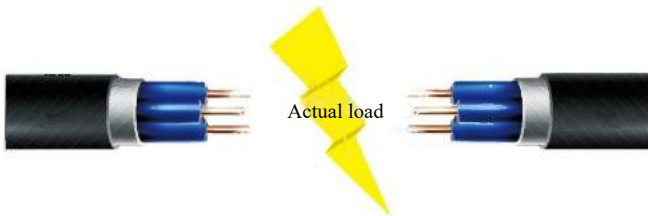
Exponential wave pulse



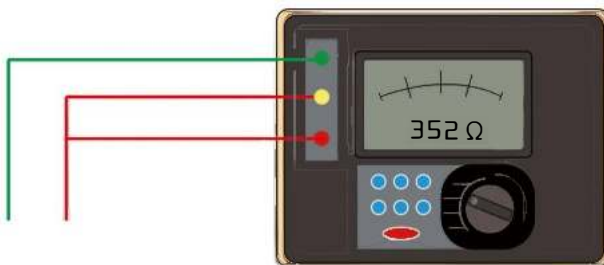
square-wave pulse

■ Circuit and arc protection

The unique circuit design prevents the generation of electric sparks, ensures experimental repeatability, and protects the sample. When the pulse or circuit is interrupted, it can safely discharge automatically.

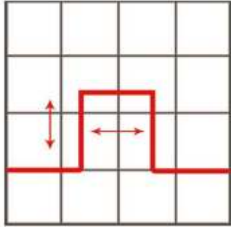


■ Support pre pulse sample resistance measurement function

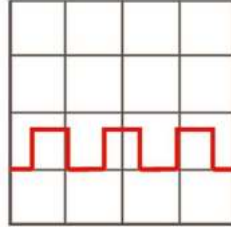


- **Pre optimization program for voltage and pulse frequency**

Unique voltage and pulse count options are available for customers to choose



Pulse time and electric field intensity



Pulse frequency

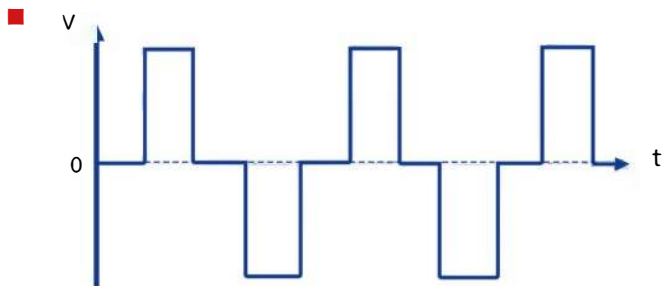
- **Equipped with foot operated switch**

Convenient and efficient operation for users



- **Polarity conversion function**

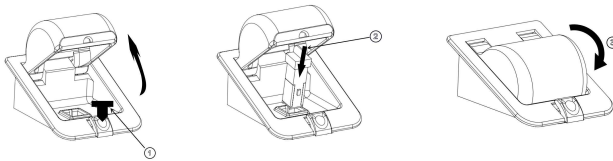
Increase transfection efficiency



Performance and Advantages

■ Integrated design electrotransposon

Easy to operate and improve efficiency



■ User-friendly digital interface

■ Optimization program for commonly used bacterial, fungal, and mammalian cell lines

Mammalian Cells	Bacterial Cells	Fungal Cells
CHO	E. coli	S. cerevisiae
Cos7	A. tumefaciens	P. pastoris
3T3	P. aeruginosa	C. albicans
293	S. aureus	S. pombe
HeLa	B. cereus	D. discoideum
BHK21	S. pyogenes	
A549	L. plantum	
CV1		
K562		
HL60		
Jurkat		
HuT78		

Configuration Parameters

Dual wave all-around electroporation instrument

GENE PULSER X2

一 Exponential decay pulse

Voltage	LV: 5-500VDC/±1v HV: 500-3000VDC/±2v
Capacitance	LV: 25-3275uF, Step by Step25uF HV: 10、15、25、35、40、50uF
Parallel resistor Pulse	50-2150Ω, Step by Step 50Ω, or
Time constant	LV:1.25ms-6.55s、HV:0.5ms-50ms
Time accuracy	0.001-100ms/1us 100-1000ms/10us 1-100s/1ms
Charging duration	LV: 0.5-10s HV: 0.5-5s
Power supply mode	Single boost mode

二 Square-wave pulse

Pulse time (pulse droop <5%)	LV Effective total pulse length: 0.00 -100ms HV Effective total pulse length: 0.00 -10ms
Time accuracy	0.001-100ms/1us 100-1000ms/10us 1-100s/1ms
Pulse interval	0.001-10s
Number of pulses	1-99
Power supply mode	After 2 seconds of a single experiment, the experiment can continue

STEP



STEP 1 Eukaryotic suspension cells



STEP 2 Add cells into the electrode cup

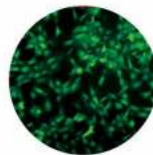
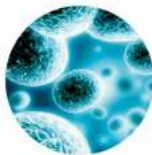
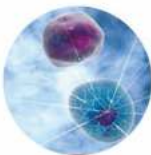
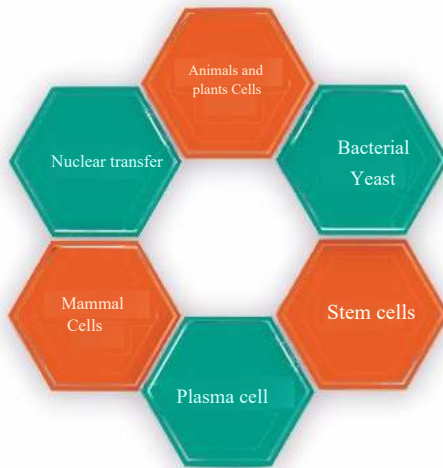


STEP 3 Electroporation pulse



STEP 4 Analyze gene expression results

Applications



References

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Technology forges perfect products



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