Mirus | The Transfection Experts

Recommended Pulse Conditions for Ingenio™ Electroporation Solution and Kits

Ingenio™ Solution on amaxa® Nucleofector® II

Cell Type	Program Setting	DNA (µg)	Cell Density ($x10^6$) cells/ml
Primary Human Keratinocyte	T-018	2	2
Primary MEFs	A-023, T-020	2	5
Primary Rat Cortical Neuron	O-003	2	1
A-549	X-001	2	2
BHK-21	A-031	2	10
CHO-K1	U-023	2	5
COS-7	W-001	2	5
HEK-293	Q-001	2	5
HEK-293T	Q-001	2	5
HeLa	I-013	2	3
Hepa	T-028	2	5
HepG2	T-028	2	5
HL-60	T-019	2	10
HUV-EC	V-001	2	3
Jurkat E6-1	X-001	2	10
K562	T-016	2	10
MCF-7	P-020	2	3
NIH-3T3	U-030	2	10
NIKS	T-018	2	2
PC-12	U-029	2	3
RAW 264.7	D-032	2	5
SK-BR-3	E-009	2	5
SK-N-MC	S-020	2	5
THP-1	V-001	2	10
U-937	W-001	2	10
Vero	V-001	2	5
Other (starting point)	Follow amaxa Nucleofector recommendations per cell line or contact Technical Support		

Standard Exponential Decay Electroporation

Cell Type	Cuvette Size (cm)	Cell Density (x10^6) cells/ml	DNA(µg)	Electroporation Volume (µl)	Voltage (V)	Capacitance (µF)
Primary Human Keratinocyte	0.2	2	2	100	150	950
	0.4		5	250	220	950
Primary MEFs	0.2	5	2	100	150	950
	0.4		5	250	230	950
Primary Rat Cortical Neuron	0.2	1	2	100	120	950
	0.4		–	–	–	–
A-549	0.2	5	–	–	–	–
	0.4		5	250	280	950
BHK-21	0.2	10	2	100	150	950
	0.4		5	250	280	950
CHO-K1	0.2	5	2	100	150	950
	0.4		5	250	280	900
COS-7	0.2	5	2	100	150	950
	0.4		5	250	260	950
HEK-293	0.2	5	2	100	160	950
	0.4		5	250	250	950
HEK-293T	0.2	5	–	–	–	–
	0.4		5	250	250	950
HeLa	0.2	3	2	100	130	950
	0.4		5	250	260	950
Hepa	0.2	5	2	100	160	950
	0.4		–	–	–	–
HepG2	0.2	5	2	100	170	950
	0.4		5	250	250	950
HL-60	0.2	10	2	100	150	950
	0.4		5	250	275	950
HUV-EC	0.2	3	–	–	–	–
	0.4		5	250	250	950
Jurkat E6-1	0.2	10	2	100	150	950
	0.4		5	250	260	950
K562	0.2	10	2	100	130	950
	0.4		5	250	250	950
MCF-7	0.2	3	2	100	150	950
	0.4		–	–	–	–
NIH-3T3	0.2	10	2	100	160	950
	0.4		5	250	260	950
NIKS	0.2	2	2	100	170	950
	0.4		5	250	280	950
PC-12	0.2	3	2	100	130	950
	0.4		5	250	240	950
RAW 264.7	0.2	5	2	100	150	950
	0.4		5	250	260	950
SH-SY5Y	0.2	5	–	–	–	–
	0.4		5	250	250	950
SK-BR-3	0.2	5	2	100	160	950
	0.4		5	250	260	950
SK-N-MC	0.2	5	2	100	90	950
	0.4		5	250	240	950
THP-1	0.2	10	2	100	140	950
	0.4		5	250	250	950
U-937	0.2	10	–	–	–	–
	0.4		5	250	260	950
Vero	0.2	5	2	100	170	950
	0.4		–	–	–	–
Other (Starting Point)	0.2	5–10	2	100	80–160	800–1000
	0.4		5	250	200–300	800–1000

Standard Square Wave Electroporation

Cell Type	Cuvette Size (cm)	Cell Density ($x10^6$) cells/ml	DNA (µg)	Electroporation Volume (µl)	Voltage (V)	Capacitance (µF)	Pulse Length (mSec)
Primary Human Keratinocyte	0.2	2	2	100	170	950	10
	0.4		5	250	250	950	15
Primary MEFs	0.2	5	2	100	170	950	10
	0.4		5	250	280	950	15
A-549	0.2	5	–	–	–	–	–
	0.4		5	250	280	950	15
Jurkat E6-1	0.2	10	2	100	180	950	10
	0.4		5	250	275	950	15
NIH-3T3	0.2	10	2	100	160	950	10
	0.4		5	250	260	950	15
NIKS	0.2	2	2	100	180	950	10
	0.4		–	–	–	–	–