

# An Electroporation Method to Transform *Rickettsia* spp. with a Fluorescent Protein-Expressing Shuttle Vector in Tick Cell Lines

 Xin-Ru Wang<sup>1</sup>, Nicole Y. Burkhardt<sup>1</sup>, Lisa D. Price<sup>1</sup>, Ulrike G. Munderloh<sup>1</sup>
<sup>1</sup>Department of Entomology, University of Minnesota

## Corresponding Author

Xin-Ru Wang

wang8848@umn.edu

## Citation

 Wang, X.R., Burkhardt, N.Y., Price, L.D., Munderloh, U.G. An Electroporation Method to Transform *Rickettsia* spp. with a Fluorescent Protein-Expressing Shuttle Vector in Tick Cell Lines. *J. Vis. Exp.* (188), e64562, doi:10.3791/64562 (2022).

## Date Published

October 11, 2022

## DOI

10.3791/64562

## URL

jove.com/video/64562

## Materials

Name	Company	Catalog Number	Comments
0.1 cm gap gene pulser electroporation cuvette	Bio-Rad	1652083	
2 µm pore size filter	GE Healthcare Life Sciences Whatman	6783-2520	
5 mL Luer-lock syringe	BD	309646	
60-90 silicon carbide grit	LORTONE, inc	591-056	
absolute methanol	Fisher Scientific	A457-4	
Bacto tryptose phosphate broth	BD	260300	
Cytospin centrifuge Cytospin4	Thermo Fisher Scientific	A78300003	The rotor is detachable so the whole rotor can be put into the hood to load infectious samples
EndoFree Plasmid Maxi Kit (10)	QIAGEN	12362	used to obtain endotoxin-free pRAM18dSFA plasmid
extended fine tip transfer pipet	Perfector Scientific	TP03-5301	
fetal bovine serum	Gemini Bio	900-108	The FBS batch has to be tested to make sure ISE6 cells will grow well in it.
Gene Pulser II electroporator with Pulse Controller PLUS	Bio-Rad	165-2105 & 165-2110	
hemocytometer	Thermo Fisher Scientific	267110	
HEPES	Millipore-Sigma	H4034	
ImageJ Fiji	National Institute of Health		raw image editing
KaryoMAX Giemsa stain	Gibco	2021-10-30	
Leibovitz's L-15 medium	Gibco	41300039	
lipoprotein concentrate	MP Biomedicals	191476	
Nikon Diaphot	Nikon		epifluorescence microscope
NucBlue Live ReadyProbes Reagent	Thermo Fisher Scientific	R37605	
Olympus Disc Scanning Unit (DSU) confocal microscope	Olympus		

---

Petroff-Hausser Counting Chamber	Hausser Scientific	Chamber 3900	
sodium bicarbonate	Millipore-Sigma	S5761	
Vortex	Fisher Vortex Genie 2	12-812	