

# Comparison with Competitors

## NEPA21 (Nepa Gene)



Transfection Efficiency



Cell Viability



Cuvettes Only  
**No Special Buffers**



Cost per Sample:  
**USD 2.00**

## Nucleofector (Lonza)



Transfection Efficiency



Cell Viability



Cuvettes  
Special Buffers



Cost per Sample:  
USD 20.00

## Neon (Invitrogen)



Transfection Efficiency



Cell Viability

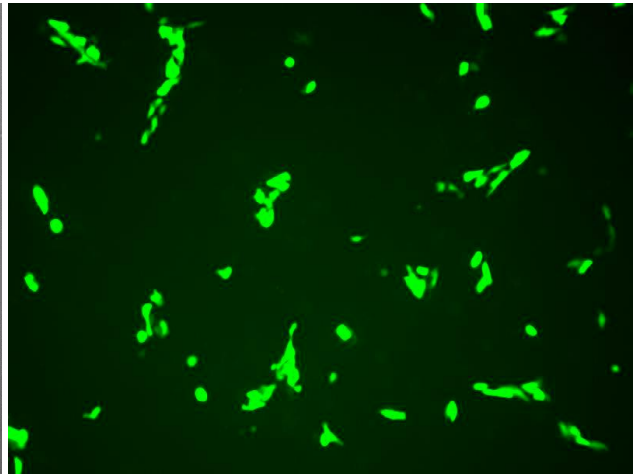
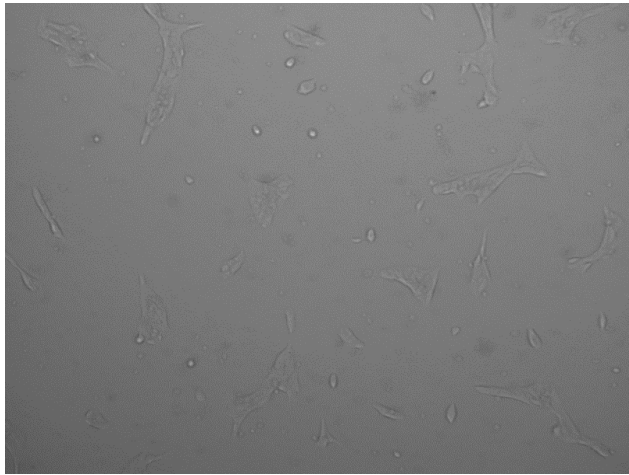


Tips  
Special Buffers



Cost per Sample:  
USD 20.00

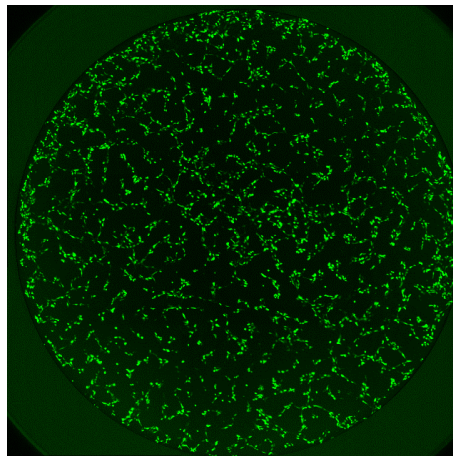
## MCF 10A Human Breast Cells



NEPA21  
(Nepa Gene)

Viability: 90%

Transfection Efficiency: 80%



Nucleofector  
(Lonza: amaxa)

Viability: 10-40%

Transfection Efficiency: 70-90%

*Kyoto University, Japan*

## Human Astrocytoma Cells (1321N1)



NEPA21  
(Nepa Gene)

Viability: 85%

Transfection Efficiency: 75%



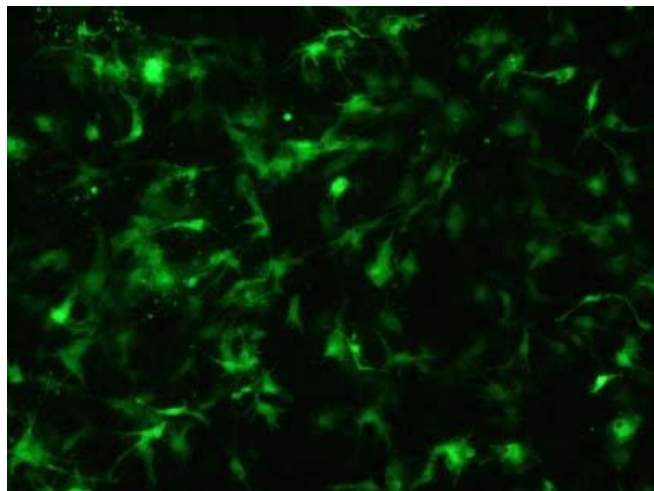
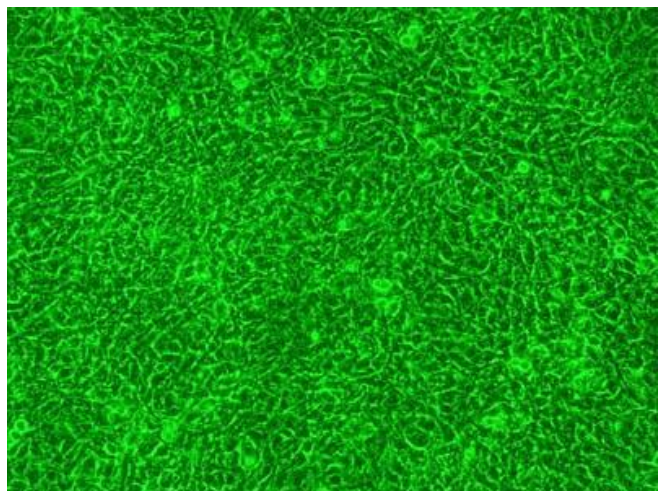
Nucleofector  
(Lonza: amaxa)

Viability: 10%

Transfection Efficiency: --

*Takasaki University of Health and Welfare, Japan*

## MC3T3-E1 Mouse Osteoblastic Cells



NEPA21  
(Nepa Gene)

Viability: 85%

Transfection Efficiency: 75%



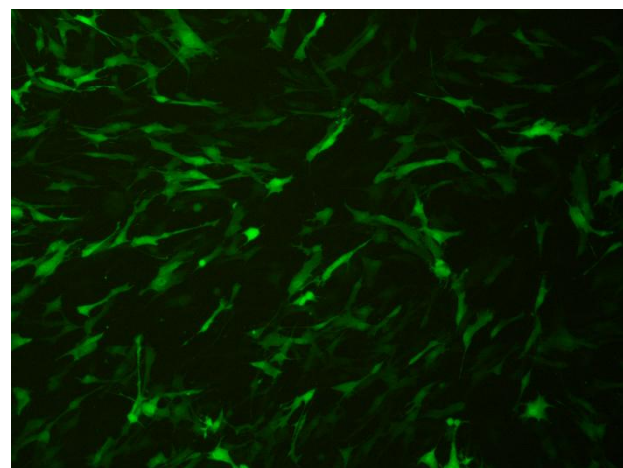
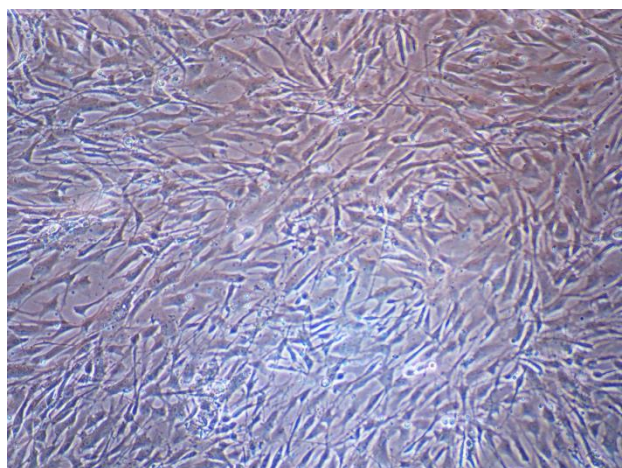
Nucleofector  
(Lonza: amaxa)

Viability: 95%

Transfection Efficiency: 10%

*The University of Tokushima Graduate School, Japan*

## Primary Mesenchymal Stem Cells



NEPA21  
(Nepa Gene)

Viability: 78%

Transfection Efficiency: 75%



Nucleofector  
(Lonza: amaxa)

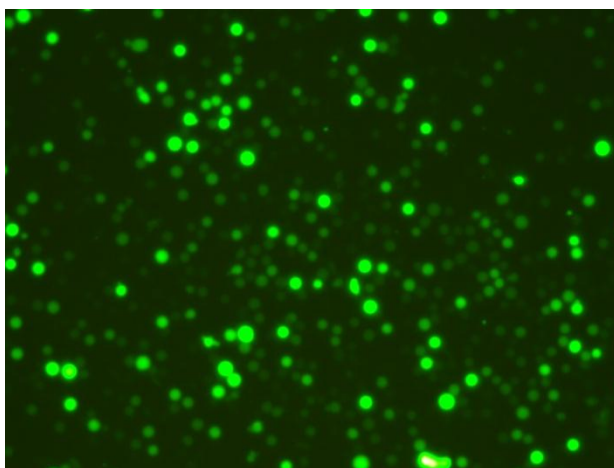
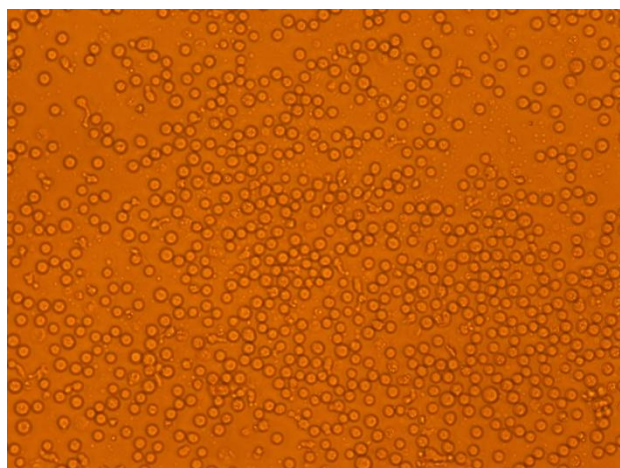
Viability: 20%

Transfection Efficiency: 20%

*A Biotechnology Company, Korea*

# Primary Human T Cells

The cells were cultured and stimulated with CD3 CD28 antibody for 66 hours before Electroporation



NEPA21  
(Nepa Gene)

Viability: 58%

Transfection Efficiency: 90%



Nucleofector  
(Lonza: amaxa)

Viability: 20%

Transfection Efficiency: 60%

*Pasteur of Shanghai, Chinese Academy of Sciences, China*

# Primary Human T Cells



NEPA21  
(Nepa Gene)

Viability: 4.3%  
(7.7%)

Transfection Efficiency: 19%  
(26%)



Nucleofector  
(Lonza: amaxa)

Viability: 1.2%

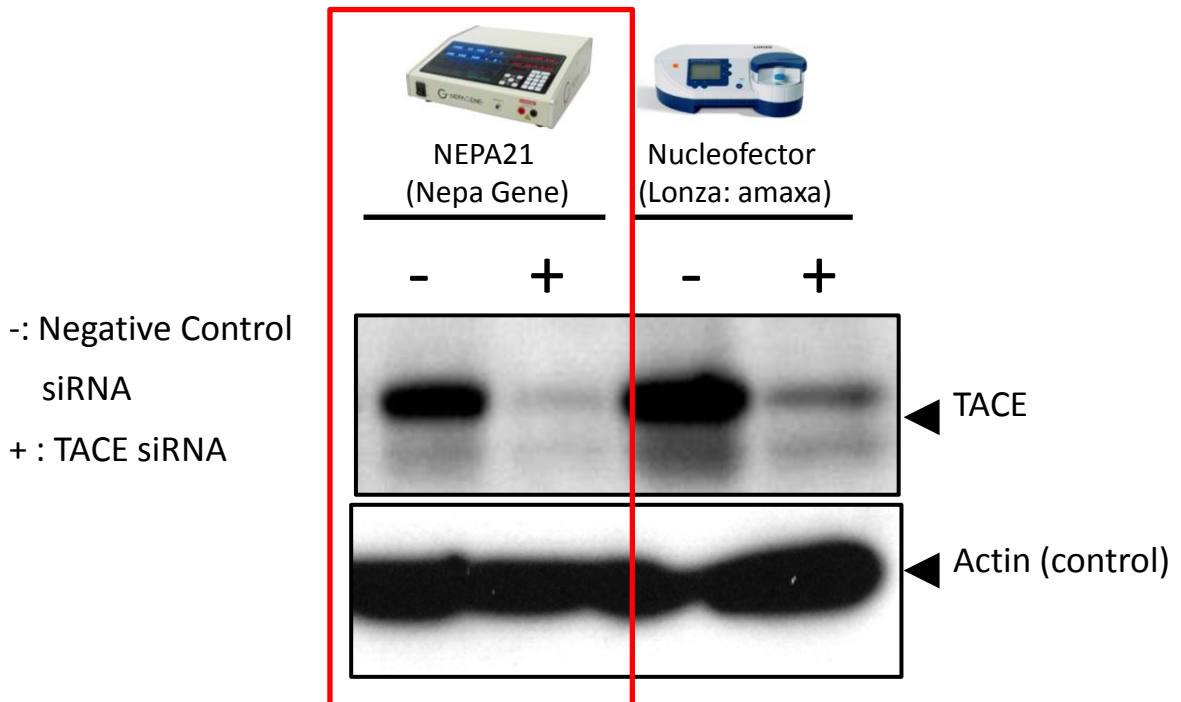
Transfection Efficiency: 44.9%

This customer had tested the Nucleofector 4D for over several months, and chose the NEPA21, not the Nucleofector 4D, after the comparison.

*National University of Singapore, Singapore*

# RAW264.7 Mouse Macrophage-like Cells

## siRNA transfection



*Keio University School of Medicine, Japan*

# ME-1 Human Acute Myelomonocytic Leukemia cells CD34<sup>+</sup> /A-E Human Preleukemic cells

Cell Reports  
Article



## Addiction of t(8;21) and inv(16) Acute Myeloid Leukemia to Native RUNX1

Oren Ben-Ami,<sup>1</sup> Dan Friedman,<sup>2</sup> Dena Leshkowitz,<sup>3</sup> Dalia Goldenberg,<sup>1</sup> Kira Orlovsky,<sup>1</sup> Niv Pencovich,<sup>1</sup> Joseph Lotem,<sup>1</sup> Amos Tanay,<sup>2</sup> and Yoram Groner<sup>1,\*</sup>

<sup>1</sup>Department of Molecular Genetics, Weizmann Institute of Science, 76100 Rehovot, Israel

<sup>2</sup>Department of Computer Science and Applied Mathematics, Weizmann Institute of Science, 76100 Rehovot, Israel

<sup>3</sup>Department of Biological Services, Weizmann Institute of Science, 76100 Rehovot, Israel

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<http://dx.doi.org/10.1016/j.celrep.2013.08.020>

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Summary Introduction Results Discussion **Exp. Proc.** Data References Supp. Info. Related Info.

Overview **Extended**

### Transfection of Kasumi-1, ME-1, and A-E-Expressing CD34<sup>+</sup> Hematopoietic Progenitor Cells by siRNA

Kasumi-1 cells were transfected with 2.5  $\mu$ M of the relevant siRNA using the cell Line Nucleofector kit V and the P-019 protocol ([Amaxa Nucleofector Technology, Lonza](#)). Unless stated otherwise the *RUNX1*-targeting siRNA matching the sequence: GACAUCGGCAGAAACUAGA (marked by green in Figure 1) was used. A-E KD was conducted with siRNA that targeted the following sequence: CCUCGAAAUCGUACUGAGA (Heidenreich et al., 2003). ME-1 and A-E/CD34<sup>+</sup> cells were transfected with the [Super Electroporator NEPA21 \(NEPAGENE\)](#). KD efficiency was assessed by qRT-PCR and immunoblotting. For extended (8 days) KD, cells were retransfected with an additional amount of siRNA (2.5  $\mu$ M) 96 hr after the first siRNA delivery.

### Nepa Gene's distributor Almog's comment:

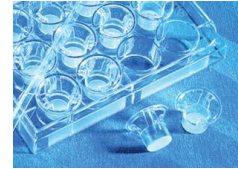
*The customer had the Nucleofector in his lab for several years and worked with it from the day he started his Ph.D project. He had **a 60% siRNA efficiency with the Nucleofector, while with the Nepa21 they had received >90%**, which also assist them to inject those silenced cells into mice. The good results with the Nepa21 after the demo cause them to order the device.*

*As for now more students in the lab are using the Nepa21 and stopped working with the Nucleofector and they are also highly recommend other labs from the same department to work with the Nepa21.*

# Madin-Darby Canine Kidney Cells (MDCK)

## shRNA plasmid transfection

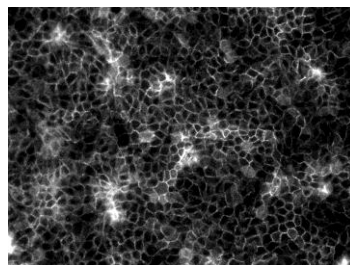
\*After EP, the cells were directly seeded on Transwells.



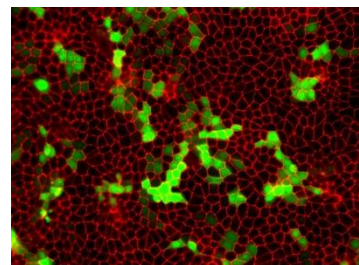
**Nonsilencing control** (transfected cells were detected with GFP signals)



Survived Enough  
for the Transwell  
Culture.



PAR-1b staining

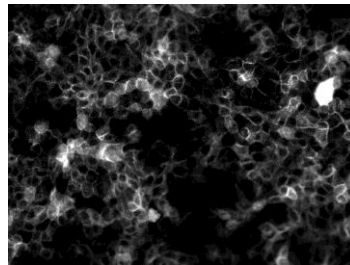


GFP / ZO1

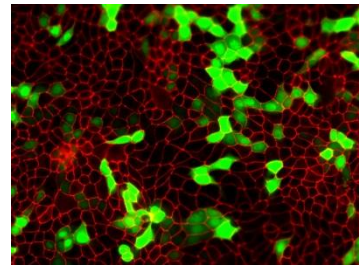
**PAR-1b RNAi** (transfected cells were detected with GFP signals)



Survived Enough  
for the Transwell  
Culture.



PAR-1b staining



GFP / ZO1

Nucleofector  
(Lonza: amaxa)

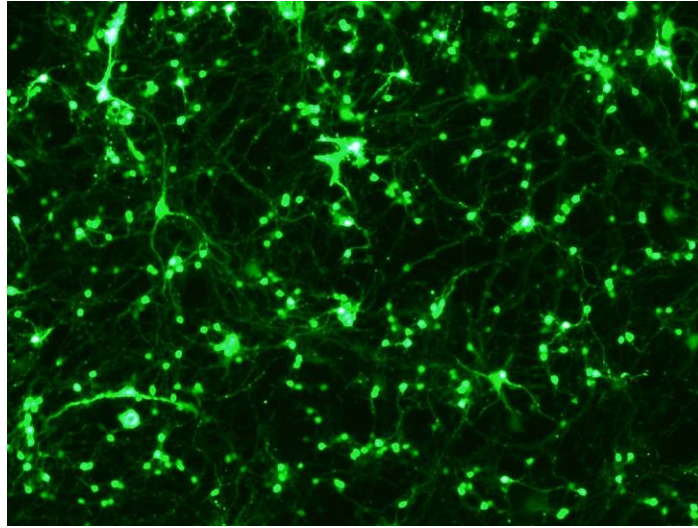
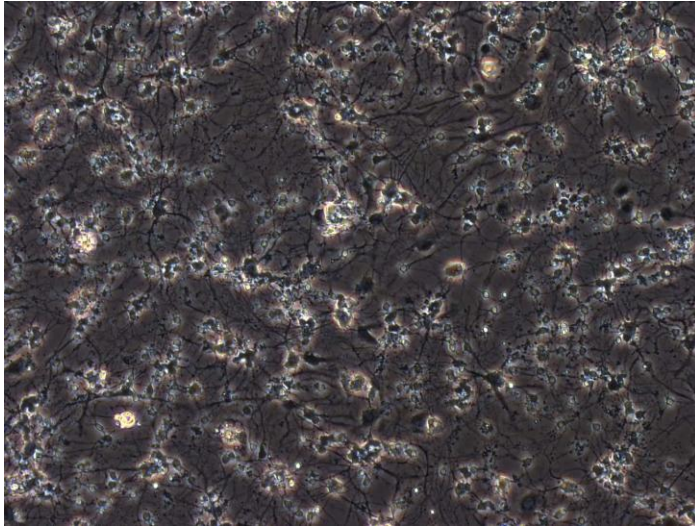


Severe Damage to Cells  
Culturing on Transwells is NOT possible.

# Primary Mouse Cerebellar Granule Neurons (CGN)



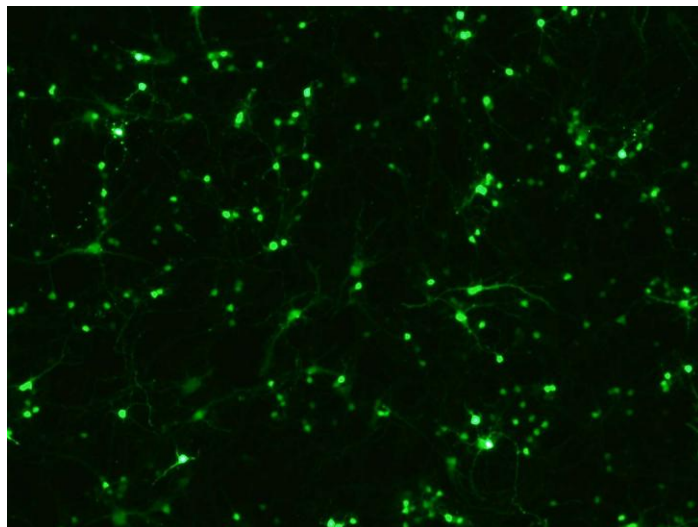
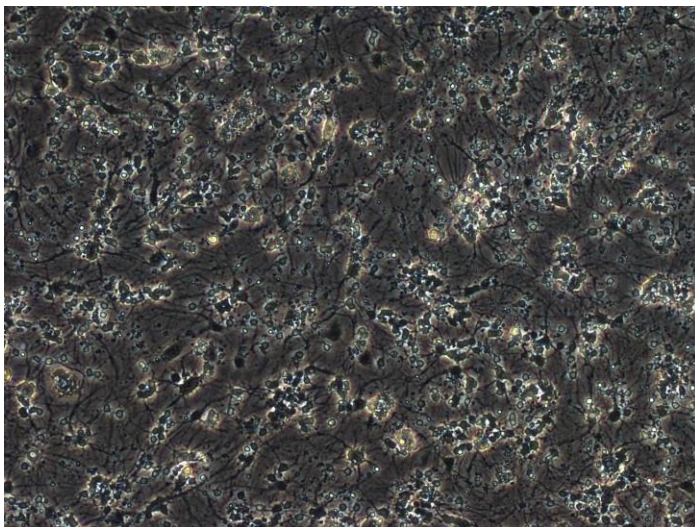
NEPA21 (Nepa Gene)



Transfection Efficiency: 65%



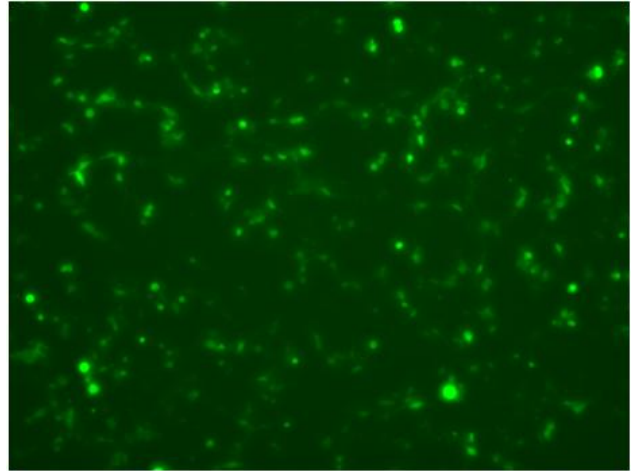
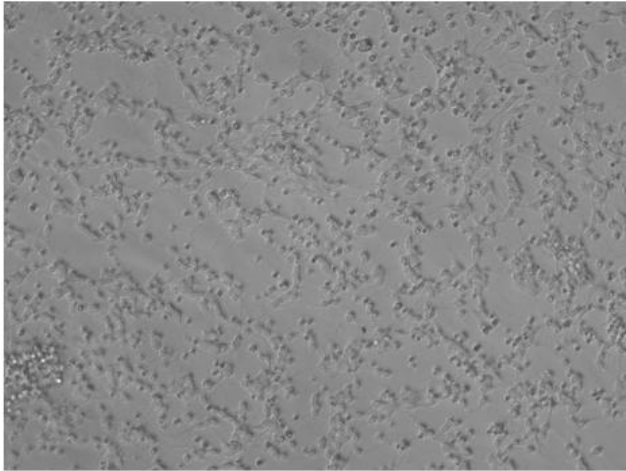
Nucleofector (Lonza: amaxa)



Transfection Efficiency: 24%



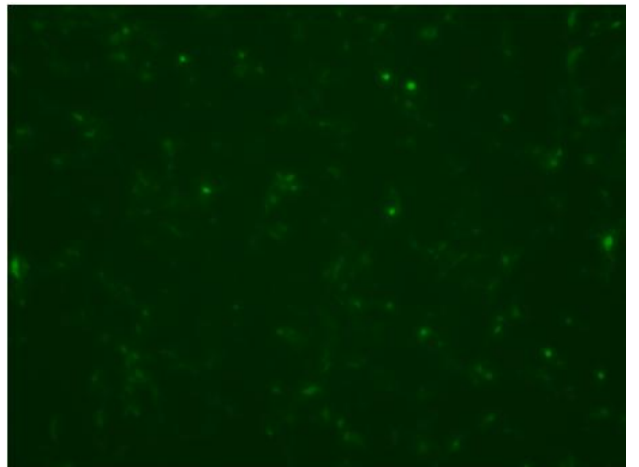
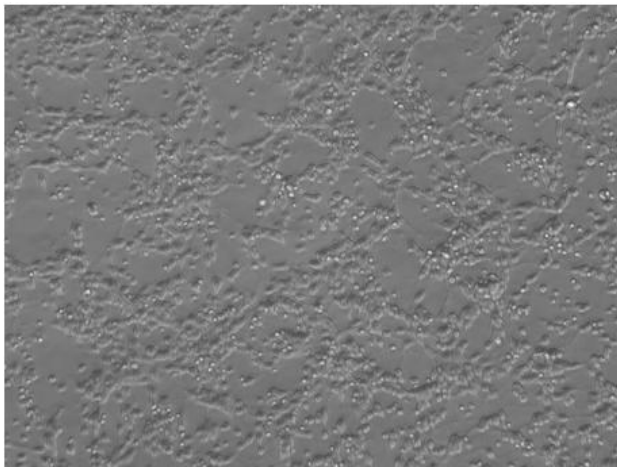
# Primary Rat Cerebellar Granule Neurons (CGN)



NEPA21  
(Nepa Gene)

Viability: 70%

Transfection Efficiency: 80%



Nucleofector  
(Lonza: amaxa)

Viability: 65%

Transfection Efficiency: 45%







*Graduate School of Biomedical Sciences, Hiroshima University, Japan*

# Human iPS cells

## TALENを用いたヒトiPS細胞におけるゲノム編集

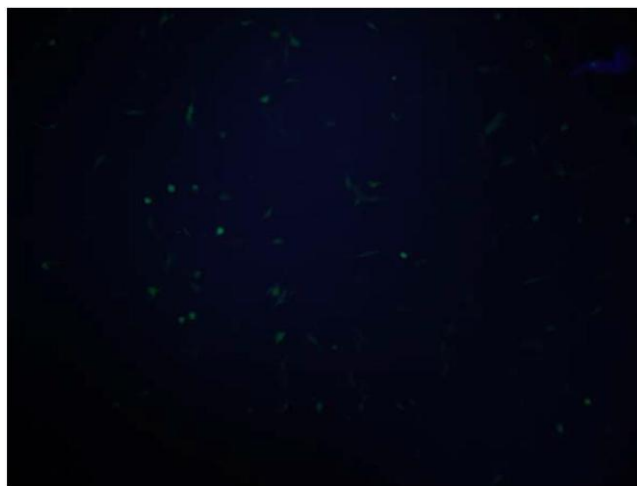
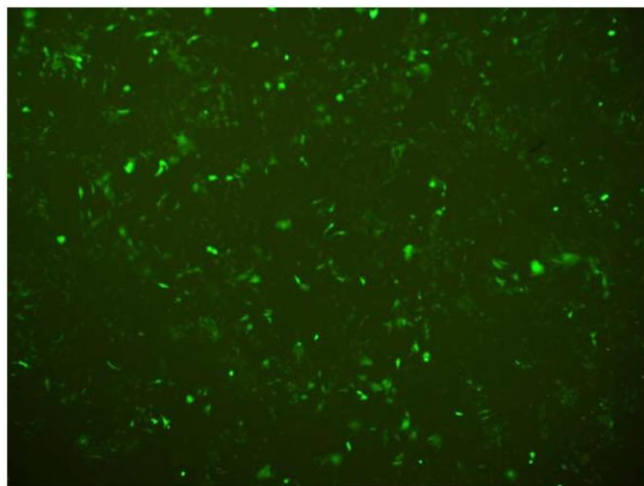
### Genome Editing in Human iPS Cells by TALENs

Table 2

Methods	Applications	DNA Transfection Efficiency	Cell Toxicity	Running Costs
Lipofectamine 2000	Transfection into adherent cells	+		\$
FuGENE HD	Transfection into adherent cells Reverse transfection	+		\$
Neon (Life Technologies)	Electroporation 	++		\$\$\$\$
NEPA21	Electroporation 	++		\$\$

*Hongmei Li, Knut Woltjen, Kazutoshi Takahashi, Shinya Yamanaka, Akitsu Hotta*  
 Center for iPS Cell Research and Application (CiRA), Kyoto University  
 Saiboh-Kohgaku Vol.32 No.5 2013

## Primary Mouse Embryonic Fibroblasts (MEF)



NEPA21  
(Nepa Gene)

Viability: 70%

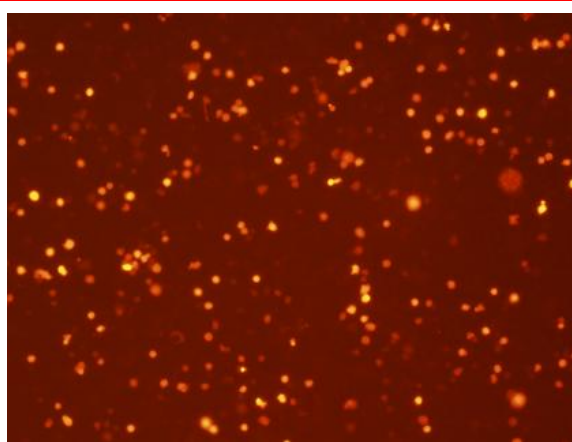
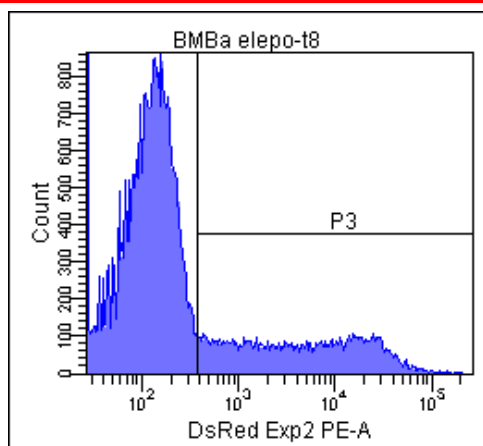
Transfection Efficiency: 80%



Neon  
(Invitrogen)

*Shanghai Jiao Tong University School of Medicine, China*

## BMBa Mouse Bone Marrow-derived Basophils



NEPA21  
(Nepa Gene)

Viability: 43%

Transfection Efficiency: 26%



Neon  
(Invitrogen)

Viability: 18%

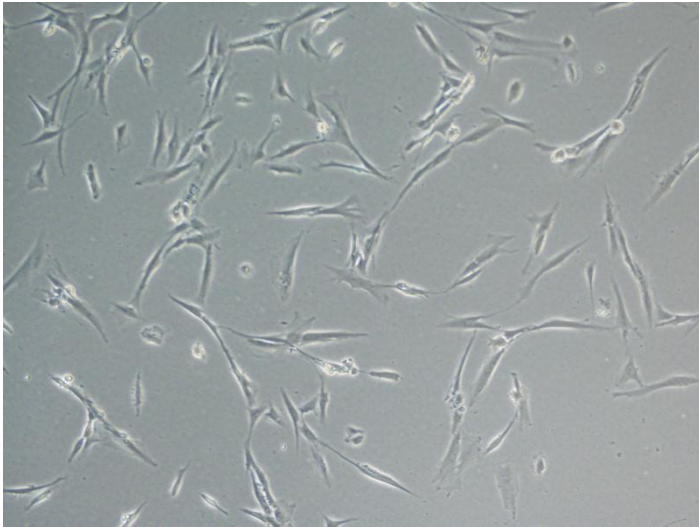
Transfection Efficiency: 23%

*Tokyo Medical and Dental University, Japan*

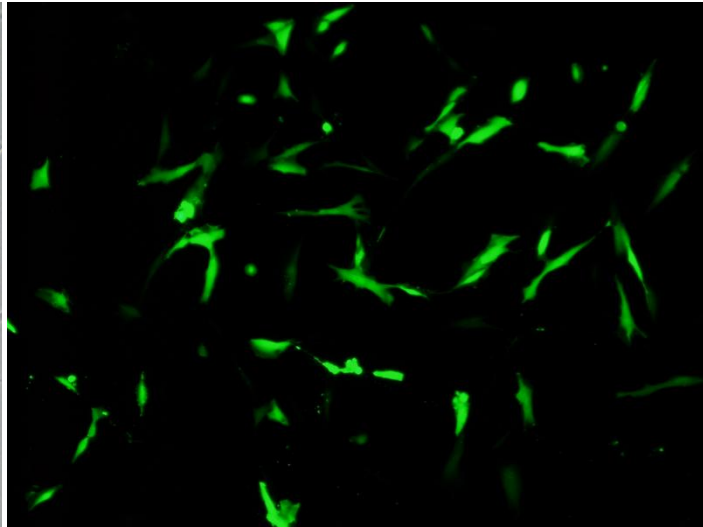
# Human Dental Pulp cells



NEPA21 (Nepa Gene)



Viability: 85%



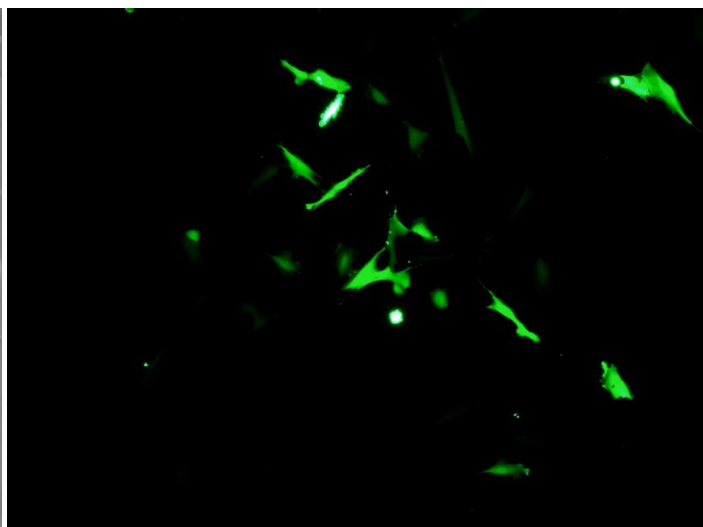
Transfection Efficiency: 69%



Neon (Invitrogen)



Viability: 80%

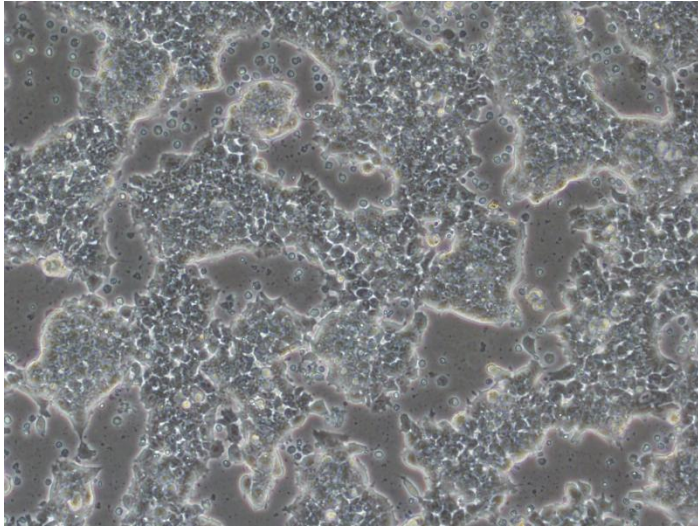


Transfection Efficiency: 30%

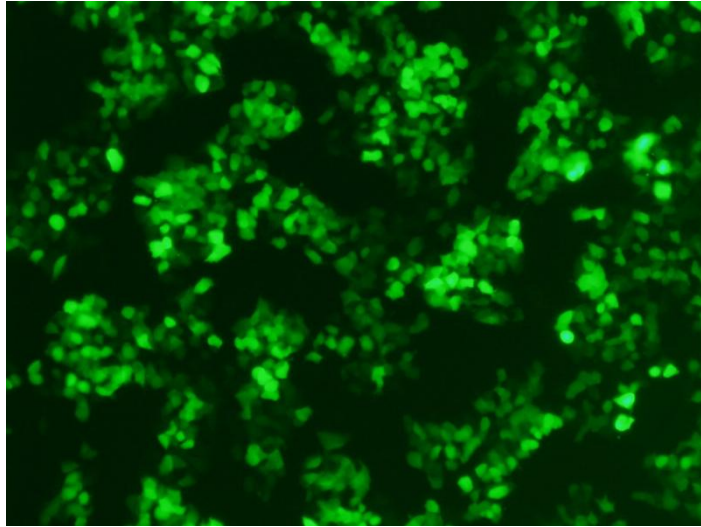
# Mouse ES cells



NEPA21 (Nepa Gene)



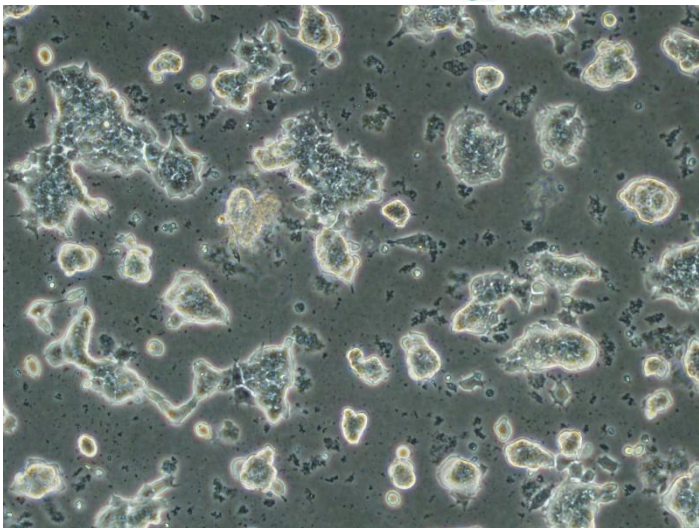
Viability: 80%



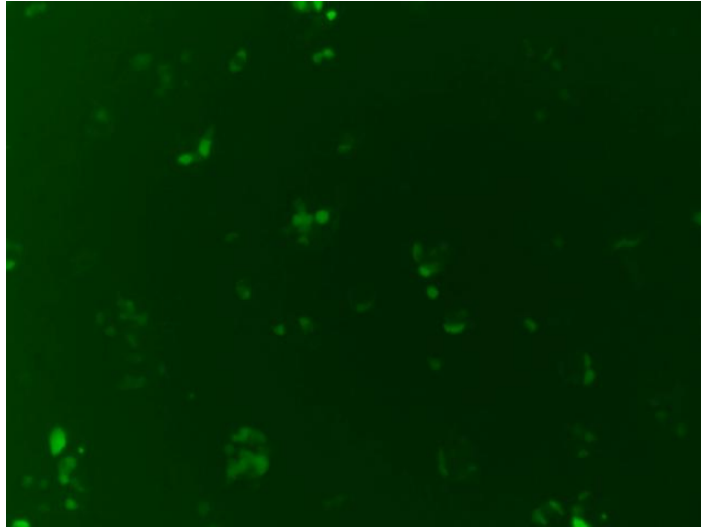
Transfection Efficiency: 68%



Gene Pulser X cell (Bio-Rad)

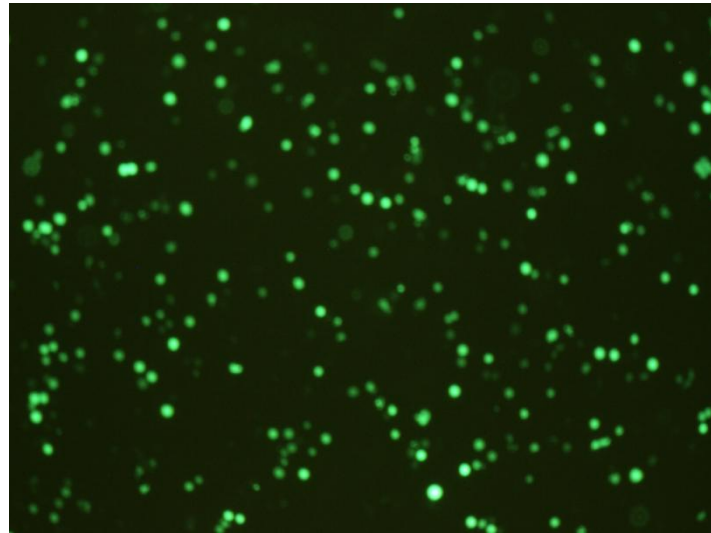
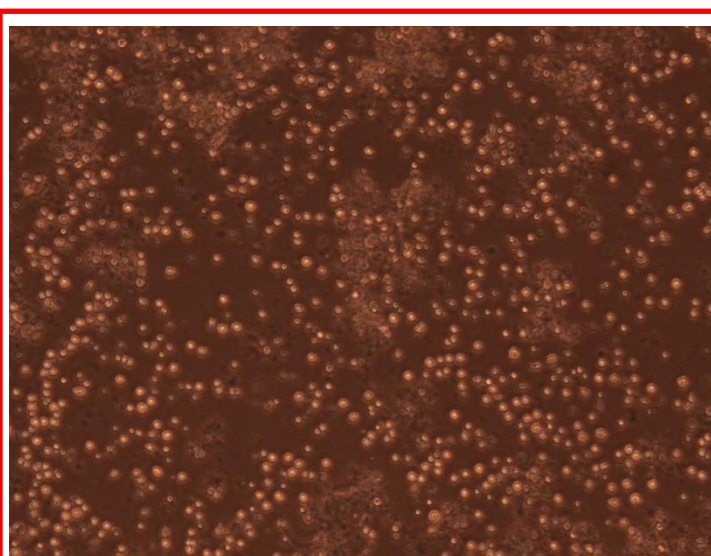


Viability : 50%



Transfection Efficiency: 14%

# KG-1 Human Acute Myeloid Leukemia cells



NEPA21  
(Nepa Gene)

Viability : 60%

Transfection Efficiency: 65%

Lipofectamine 2000 (Invitrogen) Viability :

Transfection Efficiency: 0%

*Hyogo College of Medicine, Japan*