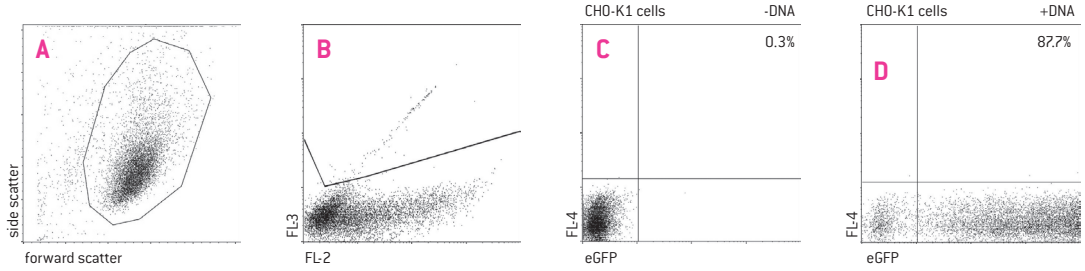
Amaxa® Cell Line Nucleofector® Kit T

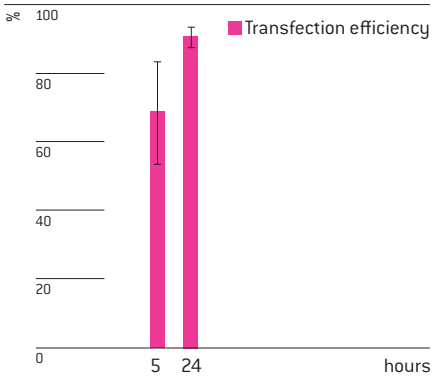
For CHO-K1 [ATCC® CCL-61™, cryopreserved]

Chinese hamster ovary; adherent fibroblastoid cells

Example for Nucleofection® of CHO-K1 cells



CHO-K1 cells (ATCC® CCL-61™) were transfected with the Cell Line Nucleofector® Kit T, Program U-023 and a plasmid encoding the enhanced fluorescent protein eGFP. Cells were analyzed 5 hours post Nucleofection® by flow cytometry. CHO-K1 cells were gated according to forward/side scatter (A). Dead cells were excluded by staining with propidium iodide and gating (B). eGFP expression of CHO-K1 is shown after Nucleofection® without (C) and with plasmid DNA (D).



Average transfection efficiency of CHO-K1 cells. CHO-K1 cells (ATCC® CCL-61™) were transfected with program U-023 and a plasmid encoding the enhanced fluorescent protein eGFP. Cells were analyzed 5 and 24 hours post Nucleofection® by flow cytometry.

Product Description

Cat. No.	**VCA-1002**
Size (reactions)	25
Cell Line Nucleofector® Solution T	2.25 ml (2.05 ml + 10% overfill)
Supplement	0.5 ml (0.45 ml + 10% overfill)
pmaxGFP® Vector (0.5 µg/µl in 10 mM Tris pH 8.0)	30 µg
Certified cuvettes	25
Plastic pipettes	25
Storage and stability	Store Nucleofector® Solution, Supplement and pmaxGFP® Vector at 4°C. For long-term storage, pmaxGFP® Vector is ideally stored at -20°C. The expiration date is printed on the solution box. Once the Nucleofector® Supplement is added to the Nucleofector® Solution it is stable for three months at 4°C.

Required Material

Note **Please make sure that the entire supplement is added to the Nucleofector® Solution. The ratio of Nucleofector® Solution to supplement is 4.5 : 1. For a single reaction use 82 µl of Nucleofector® Solution plus 18 µl of supplement to make 100 µl of total reaction volume.**

- Nucleofector® Device
- Supplemented Nucleofector® Solution at room temperature
- Supplied certified cuvettes
- Supplied plastic pipettes
- Supplied pmaxGFP® Vector
- Substrate of interest, highly purified, preferably by using endotoxin-free kits; A260 : A280 ratio should be at least 1.8
- 6-well culture dish or culture system of your choice
- **For detaching cells**: 0.5 mg/ml Trypsin and 0.2 mg/ml EDTA in PBS and supplemented culture media or PBS/0.5% BSA
- **Culture medium**: ATCC®-formulated F-12K Medium [ATCC®; Cat. No. 30-2004] supplemented with ; 10% FCS
- Prewarm appropriate volume of culture medium to 37°C (1.5 ml per sample)
- Appropriate number of cells (1 x 10^6 cells per sample; lower or higher cell numbers may influence transfection results)

1. Pre Nucleofection®

Cell culture recommendations

1.1 Replace media every 2 days
1.2 Passage cells at 85 – 95 % confluency
1.3 Seed out 2 x 10^3 cells/cm^2
1.4 Subculture 2 days before Nucleofection®. CHO-K1 cells should not be used for Nucleofection® after passage number 30
1.5 Cells should be nucleofected after reaching 80 – 90% confluency

Trypsinization

1.6 Remove media from the cultured cells and wash cells once with PBS; use at least same volume of PBS as culture media
1.7 For harvesting, incubate the cells ~5 minutes at 37°C with indicated trypsinization reagent (please see required material)
1.8 Neutralize trypsinization reaction with supplemented culture medium or PBS/0.5% BSA once the majority of the cells (>90%) have been detached

2. Nucleofection®

One Nucleofection® Sample contains
1×10^6 cells
2 µg plasmid DNA (in 1 – 5 µl H_2O or TE) or 2 µg pmaxGFP® Vector or 30 – 300nM siRNA (3 – 30 pmol/sample)
100 µl Cell Line Nucleofector® Solution T

2.1 Please make sure that the entire supplement is added to the Nucleofector® Solution
2.2 Prepare 6-well plates by filling appropriate number of wells with 1 ml of supplemented culture media and pre-incubate/equilibrate plates in a humidified 37°C/5% CO_2 incubator
2.3 Optional: Harvest the cells by trypsinization (please see 1.7 – 1.9)
2.4 Count an aliquot of the cells and determine cell density
2.5 Centrifuge the required number of cells (1×10^6 cells per sample) at 200xg for 10 minutes at room temperature. Remove supernatant completely
2.6 Resuspend the cell pellet carefully in 100 µl room-temperature Nucleofector® Solution per sample

Note **Avoid leaving the cells in Nucleofector® Solution for extended periods of time (longer than 15 minutes), as this may reduce cell viability and gene transfer efficiency.**

2.7 Combine 100 µl of cell suspension with **2 µg DNA**, 2 µg pmaxGFP® Vector or **30 nM – 300 nM** siRNA (3 – 30 pmol/sample) or other substrates
2.8 Transfer cell/DNA suspension into certified cuvette (sample must cover the bottom of the cuvette without air bubbles). Close the cuvette with the cap
2.9 Select the appropriate Nucleofector® Program **H-014** (for high viability) or **U-023** (for high expression level) (**H-14** or **U-23** for Nucleofector® I Device)
2.10 Insert the cuvette with cell/DNA suspension into the Nucleofector® Cuvette Holder and apply the selected program by pressing the X-button
2.11 Take the cuvette out of the holder once the program is finished
2.12 Immediately add ~500 µl of the pre-equilibrated culture medium to the cuvette and gently transfer the sample into the prepared 6-well plate (final volume 1.5 ml media per well). Use the supplied pipettes and avoid repeated aspiration of the sample

3. Post Nucleofection®

3.1 Incubate the cells in humidified 37°C/5% CO_2 incubator until analysis. Gene expression or down

regulation, respectively, is often detectable after only 4 – 8 hours

Additional Information

For an up-to-date list of all Nucleofector® References, please refer to:
www.lonza.com/nucleofection-citations

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References

1. Cho H et al., FASEB J. 2003; 17(3): 440-2.

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