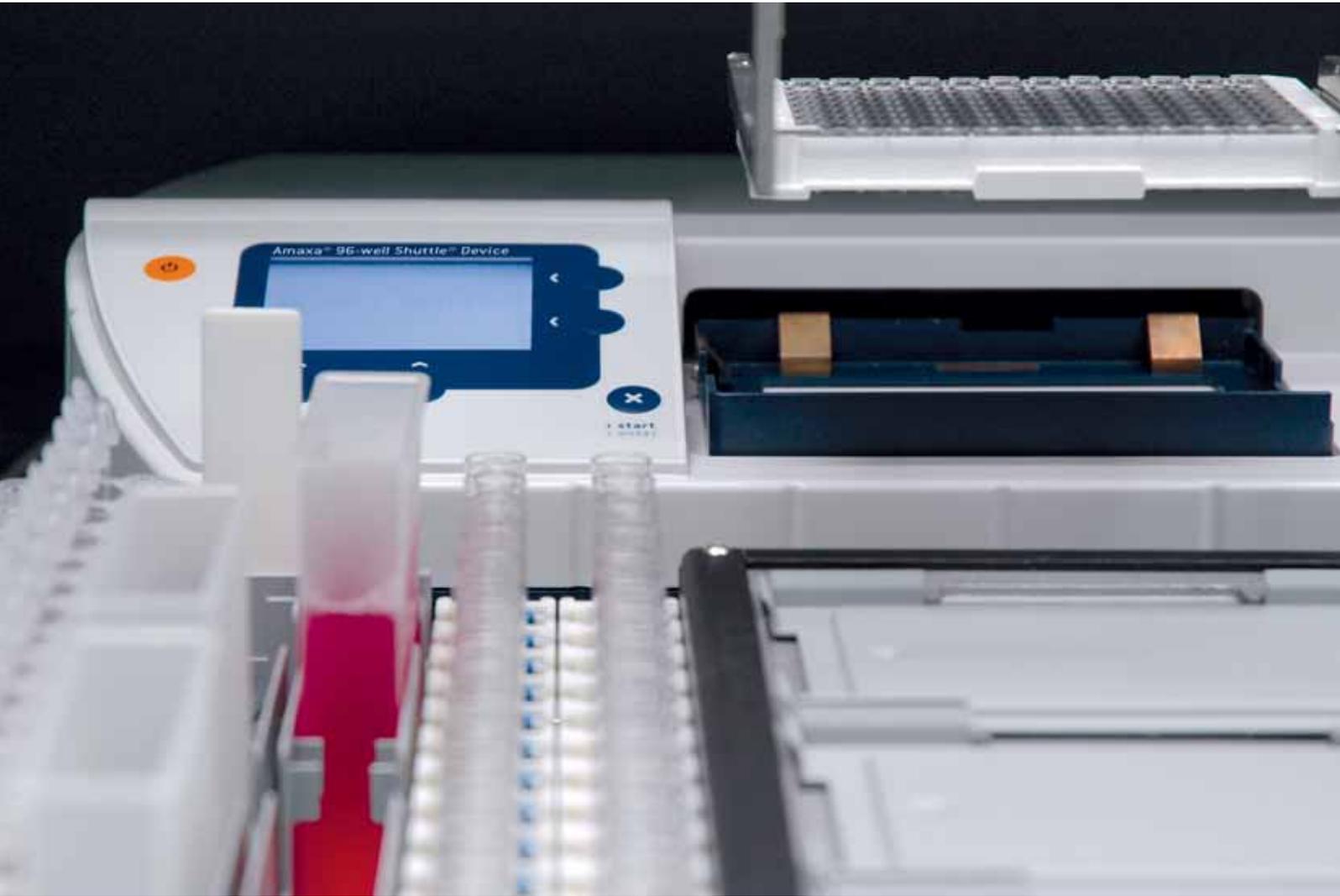


Amaxa[®] Automated Nucleofection[®] on Tecan Freedom EVO[®] Workstation



Combining Leading Technologies to New Solutions for Drug Discovery

Fully automated high throughput transfection with Tecan and Lonza's combined platform

Combining Tecan's Freedom EVO® Liquid Handling Workstation with the Amaxa® Nucleofector® 96-well Shuttle® System allows fully automated, precise and efficient transfection of difficult-to-transfect cell lines and primary cells, including neurons and T-cells. The development is ideal for large-scale studies that involve high throughput transfection, such as RNAi-based screening for target identification and validation, or screening of cDNA libraries.



Perform RNAi Experiments in Cells of the Highest Medical Relevance

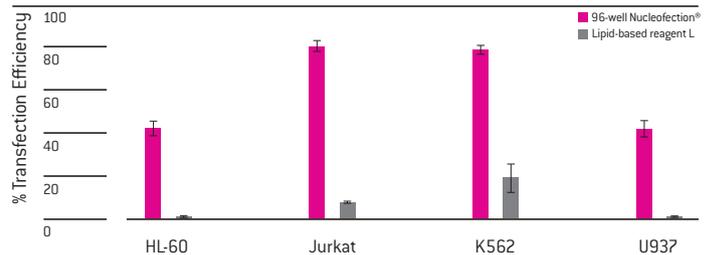
Access to difficult-to-transfect cells

The Amaxa® Nucleofector® Technology transfects even non-dividing primary cells and suspension cell lines not accessible by lipofection with high efficiency and excellent survival rates.

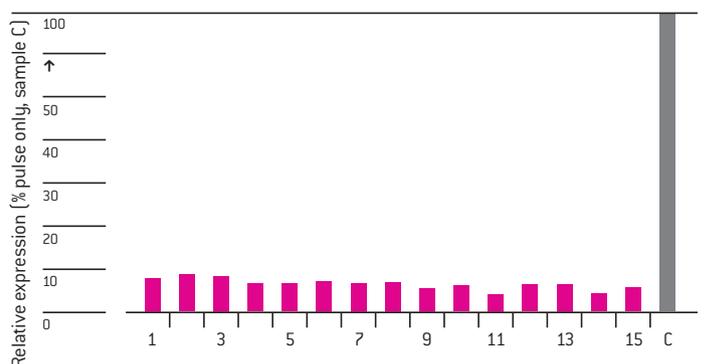
- T-cells, neurons and other difficult-to-transfect cell types can be transfected
- Up to 98% transfection efficiency with DNA combined with viabilities >90%
- Up to 99% siRNA duplex transfer even in suspension cells

Ease of use

- Optimized 96-well Nucleofector® Kits and Protocols for many primary cells and difficult-to-transfect cell lines
- Completely identical transfection conditions for various substrates including DNA, siRNA and shRNA
- Up to 96 independent programs can be run per plate
- Disposable Nucleocuvette® Plates minimize the risk of cross contamination
- Variable cell numbers can be used – from 10⁴ to 10⁶ cells per reaction



Nucleofection® versus lipofection of suspension cells. Cells were transfected with the pmaxGFP® Vector. The efficiency was measured on a BD FACSCalibur™ 24 hours post-transfection.



siRNA-mediated depletion of vimentin in human T-cells. Knockdown on mRNA level measured by qRT-PCR. 15 samples compared to control [C] set to 100%. [Data kindly provided by C. Merz, Bayer Schering Pharma AG, Berlin.]

Designed for Applications Demanding High Throughput Transfection

Fast and reproducible

- The platform can process a 96-well Nucleocuvette® Plate in just minutes, depending on the protocol used
- Small intra and inter plate standard deviations
- No edge effects and no lot-to-lot variance

Complete flexibility

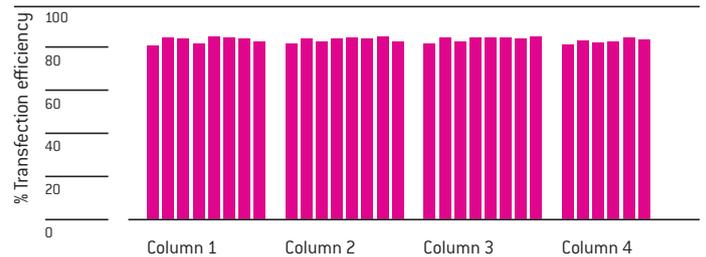
The Freedom EVO® Workstation is available in different sizes and with a variety of options, including:

- Liquid handling arm with fixed or disposable (filter) tips
- Multichannel pipettors for plating cells or direct transfer of compounds from plate to plate
- Robotic CO₂ incubator for automated cell storage, delivery and incubation
- Option for harvesting of adherent cells from robotic friendly cell culture flasks
- Cooled or heated carriers for media, nucleic acids and Nucleofector® Solution
- Integrated thermocyclers for PCR applications

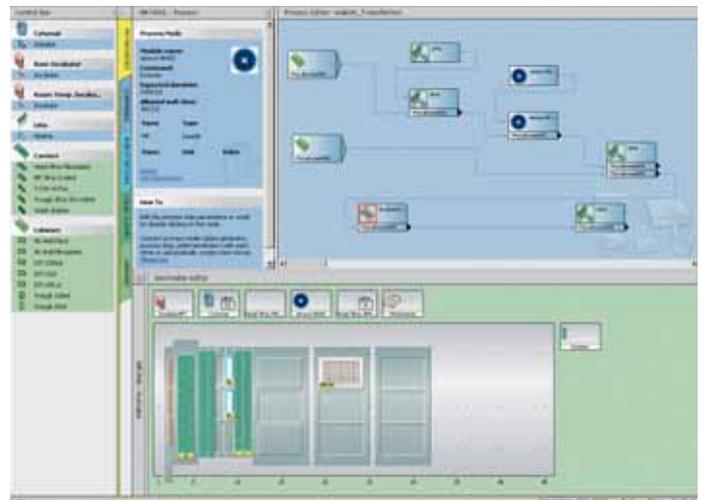
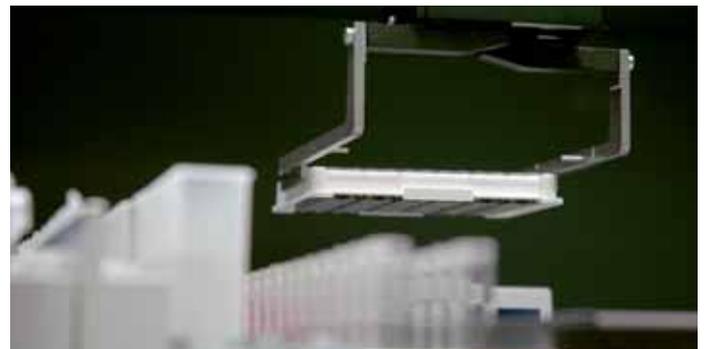
Freedom to choose

The entire process is controlled by Tecan's Freedom EVOware® Software, which allows for implementation of your specific protocols. All of the necessary steps for transfection are automated, including:

- Harvesting, cell counting, diluting to the desired density and plating
- Overnight incubation and cell washing
- DNA/RNA normalization
- Preparation and incubation of reagent mixes
- Resuspension of cells and substrates in Nucleofector® Solution prior to Nucleofection®
- Nucleofection® Process
- Incubation of transfected cells prior to analysis
- Analysis of transfection results



Reproducible intra-plate transfection efficiency in Jurkat E6-1 cells (ATCC® TIB-152™) transfected by Nucleofection®. Analysis was performed on a BD FACSCalibur™ 24 hours post Nucleofection®. The transfection efficiency of each well is shown per column of a 96-well Nucleocuvette® Plate. Column 4 contained two control samples (no pulse, no plasmid).
(Data kindly provided by C. Merz, Bayer Schering Pharma AG, Berlin.)



Freedom EVO® Workstation – Specifications

General hardware features	
Robotic arms	Liquid handling arm, robotic manipulators, several multi-channel options
Tip configuration	1, 2, 4, 8 tips, various combinations of application oriented tip types
Tip types	Standard (Teflon®-coated stainless steel) and disposable tips with or without filter (10/200/1000 µl); low-volume tips for high-density format applications
Syringe sizes	50/250/500/1000/2500/5000 µl

Liquid handling features				
Volume range	0.5 µl - 5000 µl			
Pipetting precision	Volume	Standard tips	Disposable tips	
			200 µl	1000 µl
	10 µl	<−3.0%	<−3.0%	—
	100 µl	<−0.5%	<−0.5%	<−1.0%

Safety features	
Liquid detection	Presence, absence and quantification check of liquid volumes is available for all tip types, various detection modes (single/multi) selectable
Clot detection	Detection of tip-obstruction by solid material
Password protection	Three password levels: Administrator, Application Specialist, Operator

Amaxa® Automated Nucleofection® on Tecan Freedom EVO® Workstation

Ordering Information

Cat. No.	Description	Reactions
AAD-1001S	Nucleofector® II Device	
AAM-1001S	96-well Shuttle® Device*	
SBA-1001	96-well Shuttle® Automation Package	
96-well Nucleofector® Kits for all cell lines**		
VHCA-1001	Cell Line Kit SE	(96 reactions)
VHCA-2001	Cell Line Kit SE	(960 reactions)
VHCA-1002	Cell Line Kit SF	(96 reactions)
VHCA-2002	Cell Line Kit SF	(960 reactions)
VHCA-1003	Cell Line Kit SG	(96 reactions)
VHCA-2003	Cell Line Kit SG	(960 reactions)
VHCO-1001	Cell Line Optimization 96-well Nucleofector® Kit	
Nucleofector® Kits for primary cells		
VPA-1010	B Cells, mouse	
VHPL-1001	Hepatocytes, human	
VPA-1008	Macrophages, human	
VPA-1011	Dendritic Cells, mouse	
VPI-1005	Epithelial Cells, basic	
Nucleofector® Kits for primary cells**		
VHPA-1001	B Cells, human	(96 reactions)
VHPA-2001	B Cells, human	(960 reactions)
VHPA-1002	T Cells, human	(96 reactions)
VHPA-2002	T Cells, human	(960 reactions)
VHPA-1006	T Cells, mouse	(96 reactions)
VHPA-2006	T Cells, mouse	(960 reactions)
VHPA-1007	Monocytes, human	(96 reactions)
VHPA-2007	Monocytes, human	(960 reactions)
VHPB-1002	Endothelial cells, (HUVEC)	(96 reactions)
VHPB-2002	Endothelial cells, (HUVEC)	(960 reactions)
VHPD-1001	Dermal Fibroblast, human	(96 reactions)
VHPD-2001	Dermal Fibroblast, human	(960 reactions)
VHPI-1003	Neurons, basic	(96 reactions)
VHPI-2003	Neurons, basic	(960 reactions)
VHPG-1003	Neurons, rat	(96 reactions)
VHPG-2003	Neurons, rat	(960 reactions)
VHPK-1001	Bronchial Epithelial Cells, human	(96 reactions)
VHPK-2001	Bronchial Epithelial Cells, human	(960 reactions)
VHPK-1002	Mammary Epithelial Cells, human	(96 reactions)
VHPK-2002	Mammary Epithelial Cells, human	(960 reactions)
VHPK-1003	Prostate Epithelial Cells, human	(96 reactions)
VHPK-2003	Prostate Epithelial Cells, human	(960 reactions)

* 96-well Shuttle® System includes Laptop with Nucleofector® 96-well Shuttle® Software.

** Kits for 96 / 960 reactions contain Nucleofector® Solution, Supplement, pmaxGFP® Vector plasmid as positive control and 1 / 10 Nucleocuvette® Plate[s].

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Italy	0039 0363 45710
Japan	81 3 5566 0612
Poland	48 22 833 87 45
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