H10E

Viromers,... best Transfection reagent for difficult applications

- **uses a natural yet optimized uptake mechanism (Active endosome escape)** *
Maximizes transfection efficacy and reduces background.
Viromers® have no built-in cell specific motifs

- **Zero Charge** , hence:
Compatible with / No need to remove serum or antibiotics

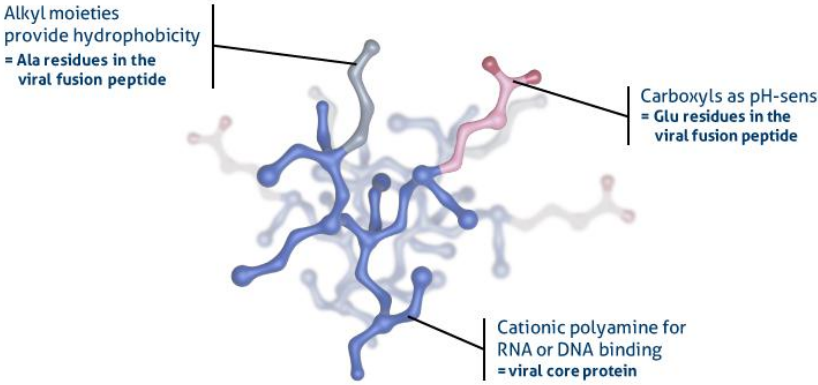
Serum does not interfere: no exchange of buffer

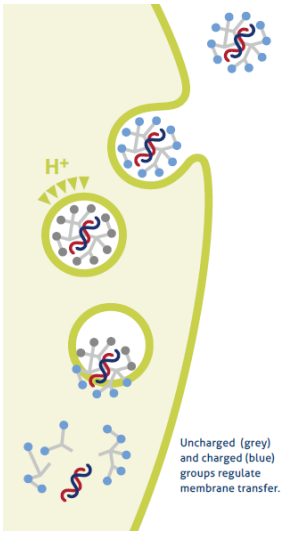
gentle on cells

- **Lipid-free** No interaction with cell metabolism in particular with lipid metabolism

- **More stable Particles** *
Lead to reliable and reproducible results

- **Can be used in forward transfection, or reverse transfection with suspension cells.**
Ready for High-throughput Screening

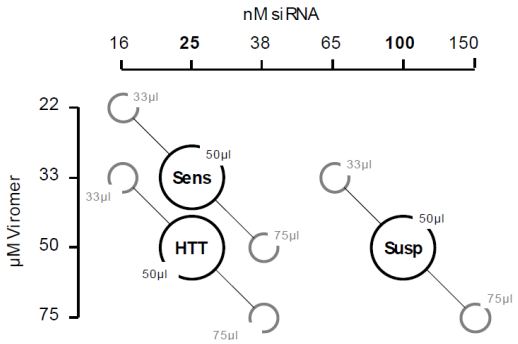




Principle: *see supportive data
Viromers® are polymer based transfection reagents taking advantage of a viral fusion mechanism. For that mechanism, the fusion peptide of influenza's hemagglutinin served as a blueprint. When exposed to low pH, this fusion peptide looses charge, becomes hydrophobic and inserts into the endosome membrane - so do Viromers.

Optimized procedure:
Simply mix DNA/RNA and Viromer. The protocol allows for
- optimization of DNA or RNA/Viromer ratio, and Nucleic acid/Viromer complex to cell ratio for Sensitive cells
Hard To transfect Cells
Suspension cells

- 6, 24. 86 and 384wells formats



Superior results:
➢ Higher cell viability and higher transfection signal.
See data examples, and cell preferences/Viromer
for siRNA transfections or for plasmid transfections

Viromer BLUE for plasmid siRNA&miRNA transfection **VB-01LB**	**1G7600**, 180µl	**1G7601**, 3x180µl
Viromer GREEN for plasmid siRNA&miRNA transfection **VG-01LB**	**1G7641**, 180µl	**1G7611**, 3x180µl
Viromer BLACK for plasmid siRNA&miRNA transfection **VBk-01LB**	**1G7641**, 180µl	**1G7611**, 3x180µl

the latest for the most difficult cells such as cardiomyocytes or neural stem cells.
(L) Technical sheet(Blue, Green, Black)

Viromer RED for plasmid DNA&miRNA transfection **VR-01LB**	**1G7630**, 180µl	**1G7631**, 3x180µl
Viromer YELLOW for plasmid DNA&miRNA transfection **VY-01LB**	**1G7640**, 180µl	**1G7641**, 3x180µl

(L) Technical sheet(Red, Yellow)

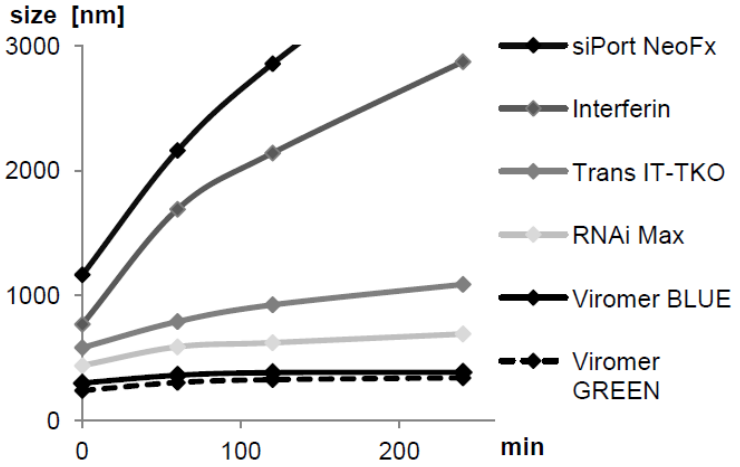
Price of all items/products, quantities)
Sample on inquire

Data

More stable particules

Unlike other transfectants, Viromers remain stable and keep their particle size for hours. This ensures maximum reproducibility within and between experiments

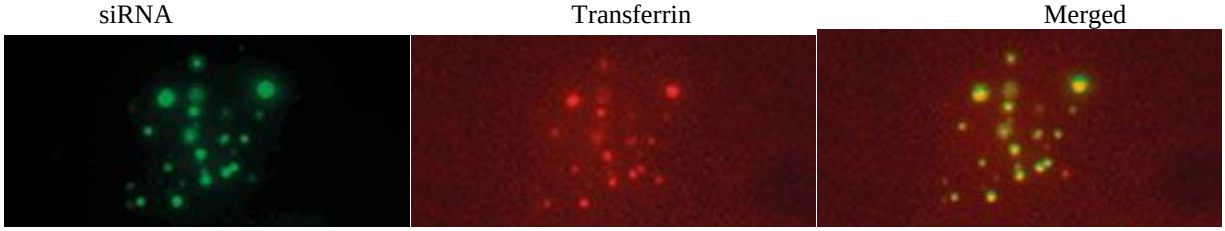
Fig.: Blue and Green Viromer with siRNA complexe with particle sizes recorded over 240min



Unique efficient membrane transfer and release in cytosol

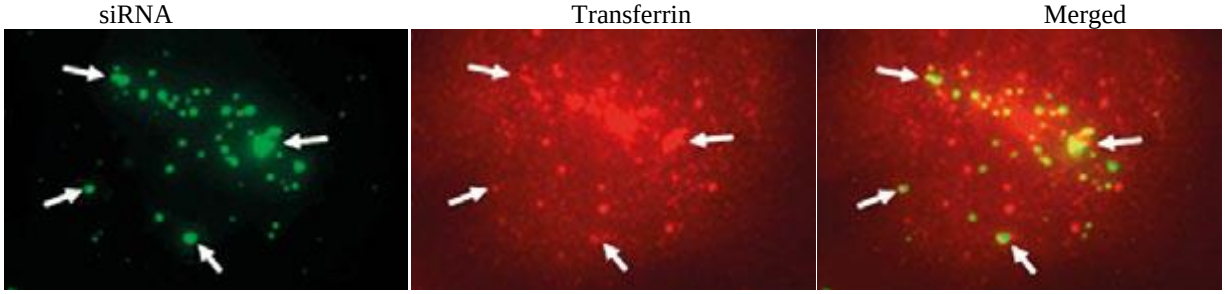
STEP 1 - **The Viromer: siRNA complex is taken up in endosomes**:
2 hours after transfection, a labelled siRNA does fully co-localize with transferrin, a marker for endosomes.

siRNA Transferrin Merged



STEP 2 - **Active Escape**.
Endosomes acidify which in turn provides membrane-penetrating properties to the Viromers.
The Viromer: siRNA complex exits from the lysosomal degradation pathway into the cytosol.

siRNA Transferrin Merged



STEP 3 - **The siRNA is released:**
In the cytosol, Viromers regain charge so that no back-transport occurs. The siRNA dissociates from the transfection complex.

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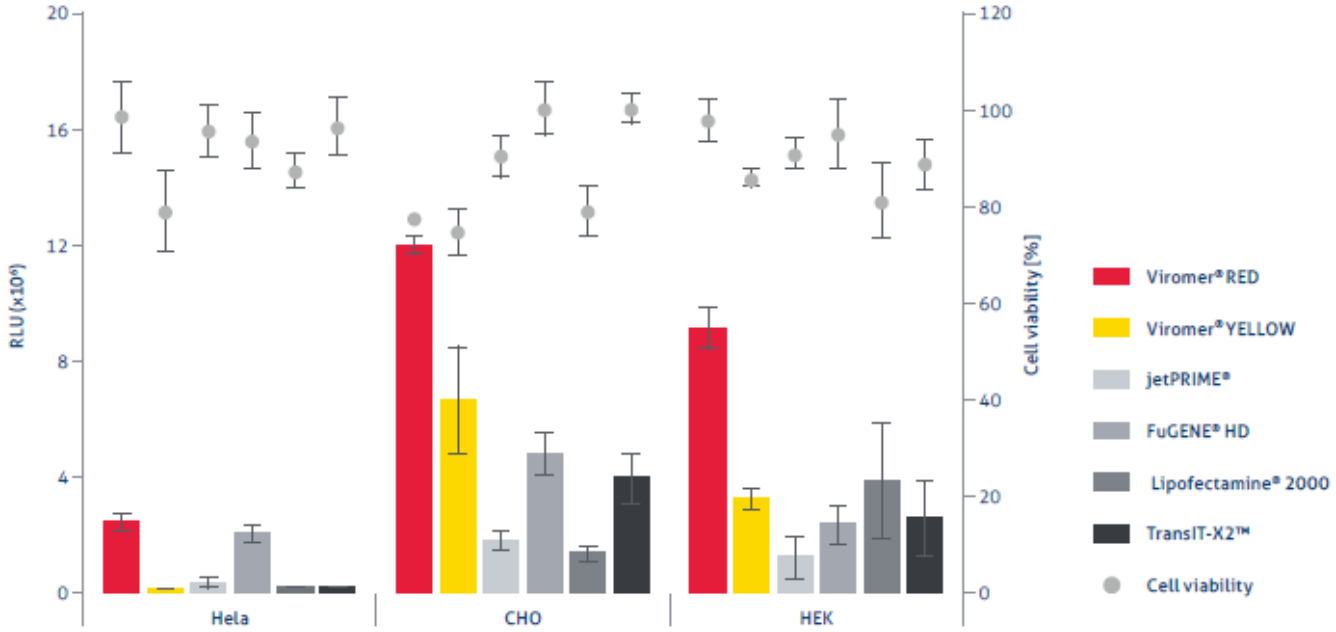
Superior transfection

Viromer® RED & YELLOW were used for plasmid transfection on standard cell lines and expression data clearly outperform benchmarking reagents. Luciferase expression (RLU) and cell viability (%) in standard cell lines 24h after transfection of pCMV-Luc (50ng DNA/96-well, low dose conditions) using Viromer® RED & YELLOW and benchmarking reagents



More data here (SHLICp) and cell preferences/Viromer below for siRNA transfections or for plasmid transfections

+

Viromer® BLUE, GREEN AND BLACK cell preferences for siRNA/miRNA Transfections

If you don't see your favourite cell types … you can still get started right away. Simply request a test sample !

Cell category	Cell type	Viromer®	Application data	Efficiency
Cell lines	Standards: Hela, CHO, Hek294, Neuro2A, HepG2	BLUE & GREEN		
	A549 lung adenocarcinoma	BLUE		60%
	BEAS-2B bronchial epithelial	BLUE		60%
	MCF-7 breast adenocarcinoma	BLUE	data	
	RAW 264.7 mouse macrophages	BLUE	data publication	up to 100%
	Ramos B lymphocyte	BLUE	publication	
	NIH3T3	BLUE		
	NCH82 & NCH149 glioblastoma	BLUE & GREEN	data	up to 90%
	U87 glioblastoma	BLUE & GREEN		
	MDA-MB468 &-MB231 breast adenocarcinoma	BLUE & GREEN		
	CT26 colorectal carcinoma	BLUE & GREEN	data	up to 100%
	HT-29, HCT116 colon carcinoma	BLUE & GREEN		
	P4E6 prostate carcinoma	BLUE	data	
	Hs746T gastric carcinoma	BLUE & GREEN	data	90%
	MPC mouse pheochromocytoma cells	BLUE & GREEN		
	SH-SY5Y neuroblastoma	GREEN	publication	
	MRC-5 lung fibroblasts	GREEN		
	TEU-2 immortilized urothelial cells	GREEN		
	C2C12 myoblasts	BLUE		
	U2OS osteosarcoma	BLUE	data	
	human granulosa / luteal cells	BLACK	data	100%
	H9c2 rat cardiomyocytes	BLACK		
Suspension cells	THP-1 monocytes	BLUE & GREEN		> 90%
	CHO-K1 suspension	GREEN		
	Kasumi-4 & MV4-11 myelomonocytic leukemia cells	BLUE		
Primary cells	Pre-adipocytes (3T3-L1, C3H10T1/2) & adipocytes	BLUE	data	up to 80%
	Schwann cells from mouse brain	BLUE		
	Primary mouse hepatocytes	BLUE		up to 100%
	Primary human macrophages & PBMCs	BLUE	data	
	Primary fibroblasts	BLUE & GREEN	data	
	Primary human skeletal myoblasts	BLUE	data	up to 100%
	Primary human bladder smooth muscles	BLUE		
	Primary keratinocytes	BLACK	data	> 80%
	HUVECs	BLUE		
Stem Cells	Neural stem cells	BLACK	data	70%
	Primary human mesenchymal stem cells	BLUE	data	90%
	Cancer stem cells / 3D-mammospheres	BLUE	data	up to 80%
	Dental follicle stem cells	GREEN	data	65%
Special applications	3D-mammosphere / Co-culture transfection	BLUE	data	
	Disaggregated primary human xenograft tumor cells	BLUE	data	up to 100%
Cell type not listed?		Test sample of **BLUE**, **GREEN** or **BLACK**		

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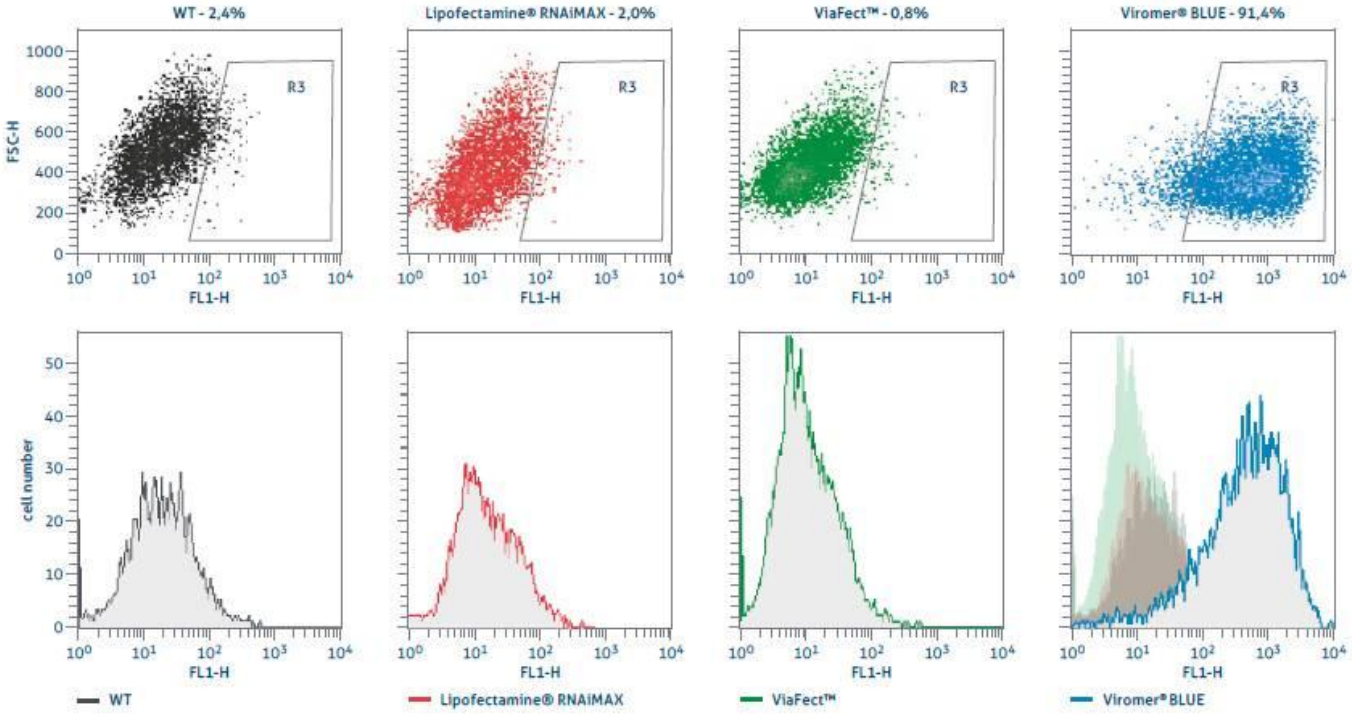
Delivery in primary human Mesenchymal Stem Cells



MSC , Fluorescein-labeled Control Oligo
- ViaFect™ and Viromer® BLUE analysed 24h after transfection
- WT and Lipofectamine® RNAiMAX analysed 48h after transfection

"The Viromer reagent is very encouraging for MSC. By using a FITC labeled control siRNA I got a 92 % transfection efficiency using Viromer Blue. This is an enormous difference compared to promega reagent and lipofectamine."

J. Luetzkendorf, UK Halle (Saale)

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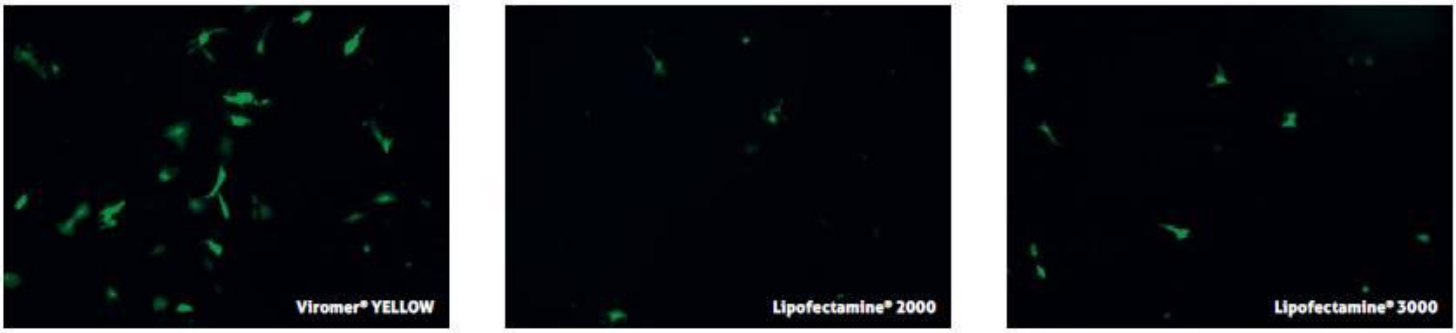
Viromer® RED & YELLOW cell preferences for PLASMID / mRNA Transfections

If you don't see your favourite cell types … you can still get started right away. Simply request a test sample !

Category	Cell type	Viromer®	Application data	Efficiency
Cell lines	Standards: HeLa, HEK-293 …	RED & YELLOW	data	
	Neuro2A, HepG2	RED & YELLOW		
	CHO	YELLOW	publication	
	HT-29 colorectal carcinoma	RED		
	A549 lung adenocarcinoma	RED		
	H226 lung squamous cell carcinoma	RED		
	BEAS-2B bronchial epithelial	RED		
	HACAT keratinocytes	RED		
	Huh-7 hepatocellular carcinoma	RED		
	SH-SY5Y neuroblastoma	RED		70%
	RAW 264.7 mouse macrophages	RED	data	> 60%
	INS-1 insulin secreting beta cell derived line	YELLOW		
Suspension cells	THP-1 monocytes	RED		
Primary & Stem cells	Primary mouse hepatocytes	RED		
	Primary keratinocytes	RED		
	Primary human macrophages	RED	data	
	Primary rat cardiomyocytes	YELLOW	data	50%
	Primary human fibroblasts	YELLOW		
	Primary mouse embryonic fibroblasts (MEF's)	RED		
	Primary myoblasts	RED & YELLOW		
Cell type not listed?		Test sample of **RED** or **YELLOW**		

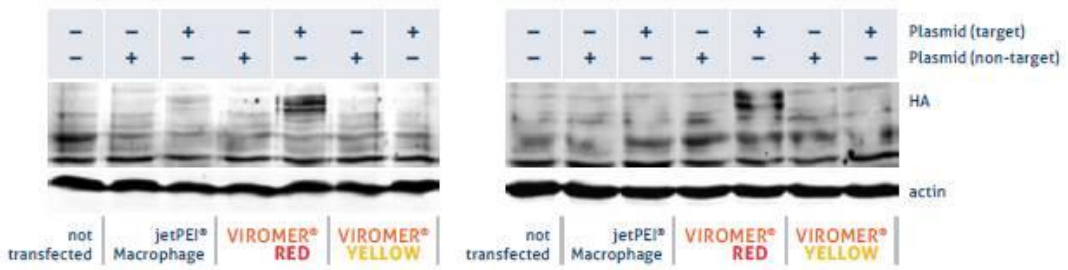
Primary cardiomyocytes



Primary human monocyte derived macrophages

- 6-well setup
- transfected with control plasmid or HA-tagged encoding protein

Only Viromer® RED shows reproducible and satisfactory overexpression of the target protein.



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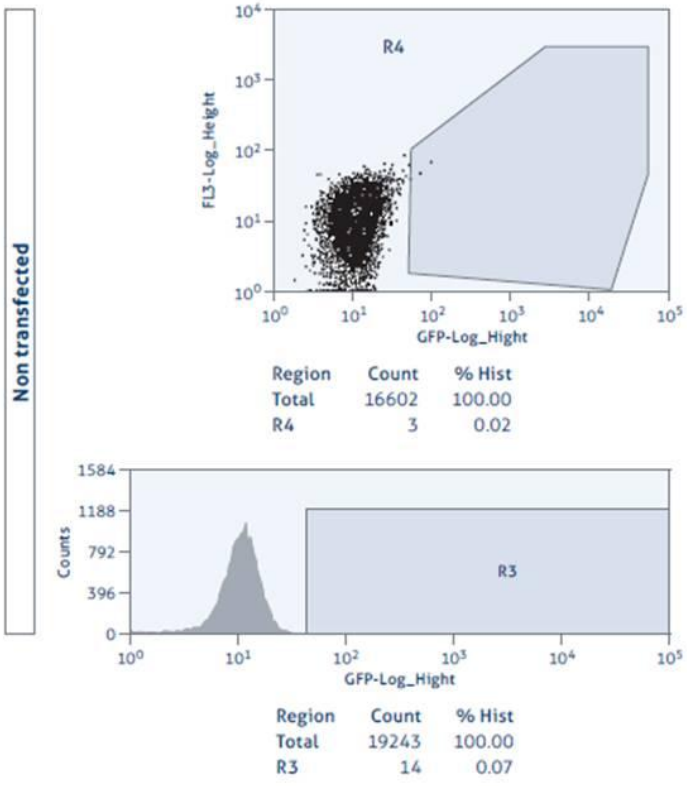
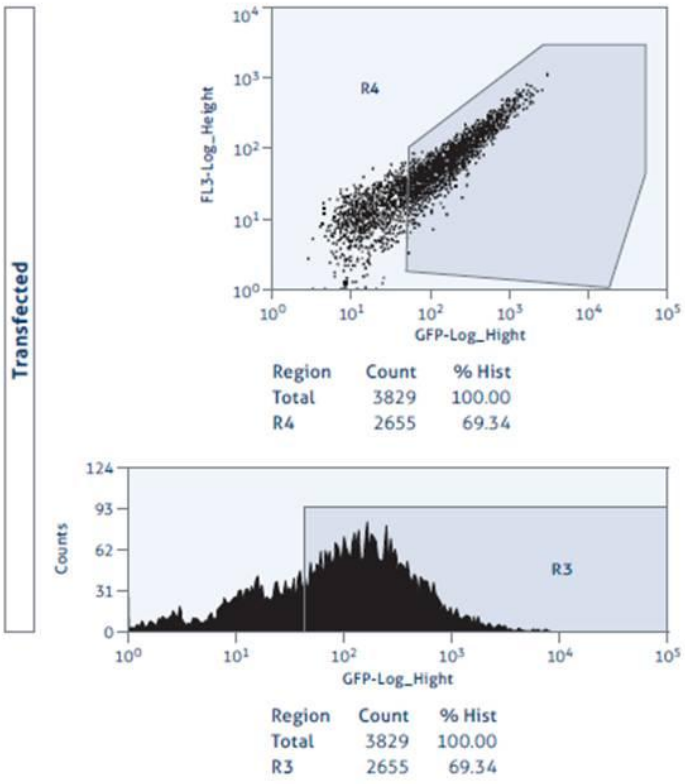
Delivery in adult Neural Stem Cells with Viromer **BLACK**

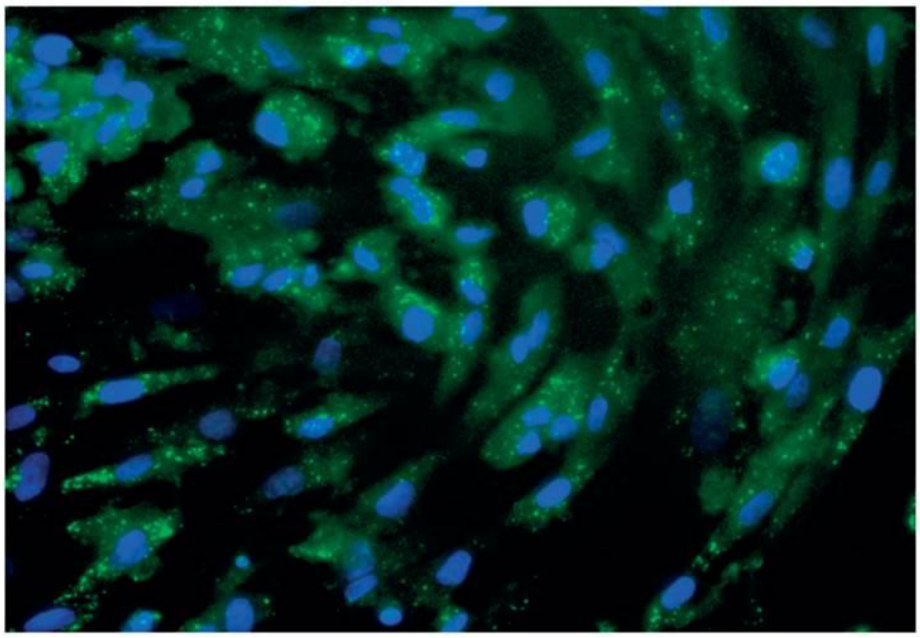




- adult mouse neural stem cells
- 10-cm dish
- antagomiR 50nM
- Viromer® BLACK 50µM (1:100 dilution)

"...Viromer Black reaches it transfection efficiency at as high as 69.34% compared to our standard transfection method at around 30%."
N. Li, UCL Institute of Neurology London

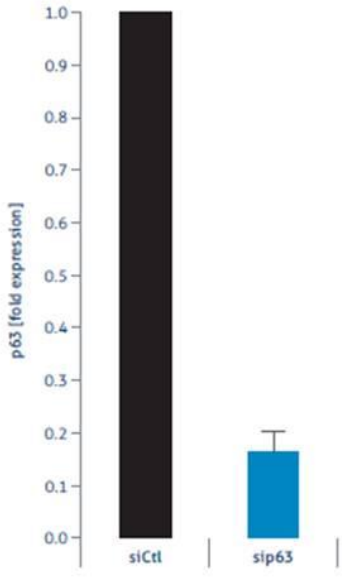
Delivery in human granulosa / luteal cells



- human granulosa / luteal cells
- 96 well setup
- FITC-conjugated signal silence control siRNA (20 nM / 2 x 104 cells / well)
- 100% transfected cells after 48 h

"Viromer Black transfected 100% of the cells after 48 h."
J. Peluso, University of Connecticut Health Center Farmington

Primary keratinocytes



- 48h after transfection
- 5,5pmol sip63
- 84% knockdown

"We are very happy with the results. Now Viromer Black is a very good alternative to our standard transfection method which is associated with the use of high siRNA concentration and significant cell loss. The toxic effect with Viromers is very low and we get a very good cell yield."
University of Regensburg

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