Panomics

DeliverX™ & DeliverX Plus siRNA Transfection Kits

Efficiently transfect siRNA into a wide range of cell types

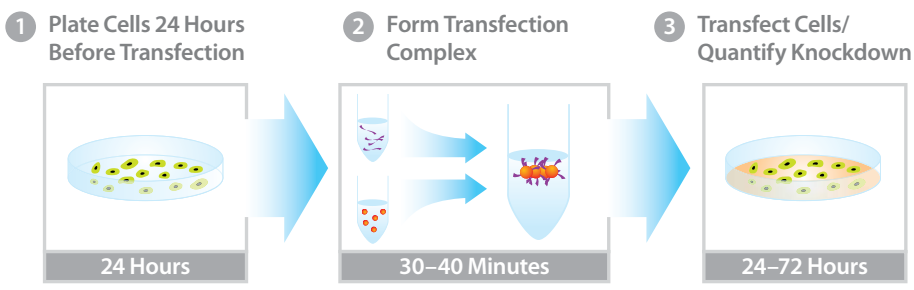
Now, high performance siRNA delivery to a wide range of cell types is efficient and robust with DeliverX siRNA and DeliverX Plus siRNA Transfection Kits, exclusively from Panomics. DeliverX and DeliverX Plus siRNA Transfection Reagents are novel in that they use virus-derived-peptides that directly interact with their cargo to form nanoparticles capable of passively diffusing through the plasma membrane and releasing their content. Unlike lipid-derived and other transfection systems, the mechanism of entry of DeliverX Transfection Reagents is independent of receptor-mediated and endocytic pathways—preventing potential degradation of your precious cargo.

DeliverX and DeliverX Plus siRNA Transfection Kits

DeliverX siRNA reagents are available in two formats: DeliverX and DeliverX Plus siRNA Transfection Kits. Regardless of which solution suits your needs, each of these kits offers unrivalled siRNA transfection efficiency, minimal cellular toxicity and a simple workflow.

DeliverX siRNA Transfection Kits are suitable for the efficient transfection of most cell types with minimal cell damage and good reproducibility when following the optimization guidelines provided in the User Manual.

Easy-to-Use—Simple Workflow



Highlights

Novel—peptide-based, non-endosomal delivery mechanism

Versatile—form a single transfection complex and dilute to evaluate multiple siRNA concentrations

Efficient—high transfection efficiency to a variety of cell types

Easy-to-use—simple workflow, does not require medium change during transfection

Low toxicity—cells remain healthy at optimal transfection conditions

Reproducible—excellent inter-well and inter-day precision

Saves time—permits batch transfection

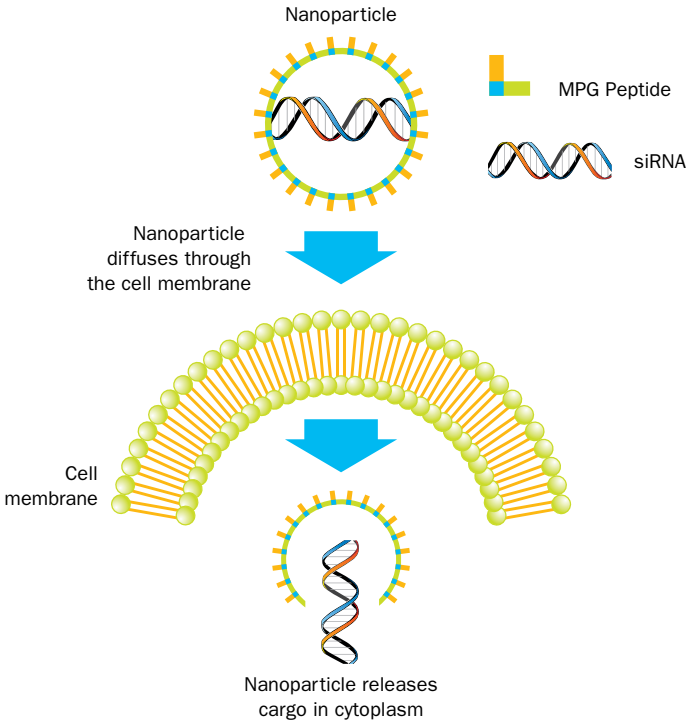
Flexible—transfect into trypsinized or suspension cells

Table 1: Cell types transfected with DeliverX Plus siRNA Transfection Kit using validated cell type specific protocols.

3T3-L1	differentiated mouse adipocytes
C2C12	differentiated mouse myotubes
C2C12	undifferentiated mouse myocytes
RAW 264.7	mouse macrophage cells
U87MG	human brain glioblastoma astrocytoma cells
NHEK-AD	primary human adult keratinocytes
THP-1	human peripheral blood acute monocytic leukemia cells
HUVEC	human umbilical vein endothelial cells
MDA-MB-231	human breast adenocarcinoma cells
MCF-7	human breast carcinoma cells
HT29	human colon carcinoma cells
SW620	human colon carcinoma cells
HepG2	human hepatocarcinoma cells
BSMC	human bronchial smooth muscle cells
A549	human lung carcinoma cells
A2780	human ovarian cancer cells
ASPC-1	human pancreatic carcinoma cells
Astrocytoma	human astrocytoma cells

All validated cell-specific protocols meet the specification of ≥ 70% mRNA knockdown of GAPDH and ≥ 70% relative cell viability 24 hours post transfection.

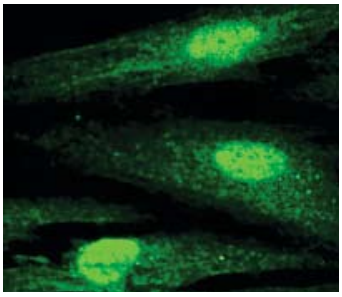
DeliverX Plus siRNA Transfection Kits contain components particularly well suited for classically difficult-to-transfect cell types and comes with a certificate of analysis for each lot and a set of validated cell type specific protocols. We currently have 18 validated cell type specific protocols with additional cell types being added on a monthly basis. All validated cell-specific protocols meet the specification of ≥ 70% mRNA knockdown of GAPDH and ≥ 70% relative cell viability 24 hours post transfection.



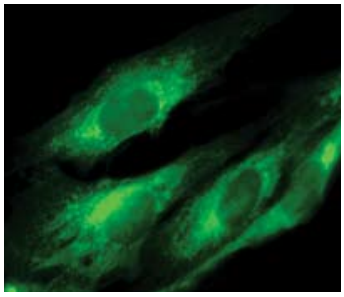
Novel, Peptide-based Delivery Mechanism

The DeliverX and DeliverX Plus Transfection Reagents are based on novel "MPG" delivery technology developed at Centre de Recherches en Biochimie Macromoléculaire (CNRS) in Montpellier (France) in the laboratory of Dr. F. Heitz and Dr. G. Divita. MPG technology uses virus-derived amphipathic peptides that directly interact with nucleic acid cargos to form nanoparticles capable of diffusing through plasma membranes and releasing their contents inside the cell.[1-5] The mechanism of entry is receptor-independent, involves MPG/lipid interactions, and avoids the endocytic pathway, thereby preventing endosomal or lysosomal degradation of cargos.[4] The diffusion capability of MPG technology permits efficient and robust siRNA delivery into a wide range of cell types. MPG peptides

MPG Peptide



MPG Peptide + NLS Mutation



Targeted Delivery of siRNA into HS-68 Cells.

MPG peptide technology targets delivery based on the amino acid sequence within the nuclear localization sequence (NLS).

can be designed to accommodate specific molecular cargos including siRNAs, single and double strand oligonucleotides, peptides, plasmids and proteins. Soon, we will be launching kits for these 'cargo' types.

siRNA-Mediated Gene Silencing in 3T3-L1 Differentiated Adipocytes using DeliverX Plus siRNA Transfection Kit

Differentiated murine 3T3-L1 adipocytes,[6] used for studying insulin signaling, glucose homeostatis and lipid loading, have been efficiently transfected with DeliverX Plus siRNA Transfection Reagent with no apparent effect on cell viability. Until now, transfection of adipocytes was limited to electroporation.

Transfection Proficiency Controls

Panomics' transfection proficiency controls are validated tools to enable users to optimize transfections under controlled conditions. Our FAM-labeled siRNA Control enables visualization of transfection efficiency 1–4 hours post transfection. Our Human GAPDH siRNA Control is a high potency siRNA used for functional evaluation of transfection efficiency. For your convenience, these controls are available separately and are included in both of our Evaluation Kits at no extra charge.

Evaluation Kits

Evaluation Kits are available for both the DeliverX siRNA and DeliverX Plus siRNA Transfection products. In addition to the standard kit components, the evaluation kits contain two proficiency controls, one visual and one functional, to enable users to optimize their transfections under controlled conditions.

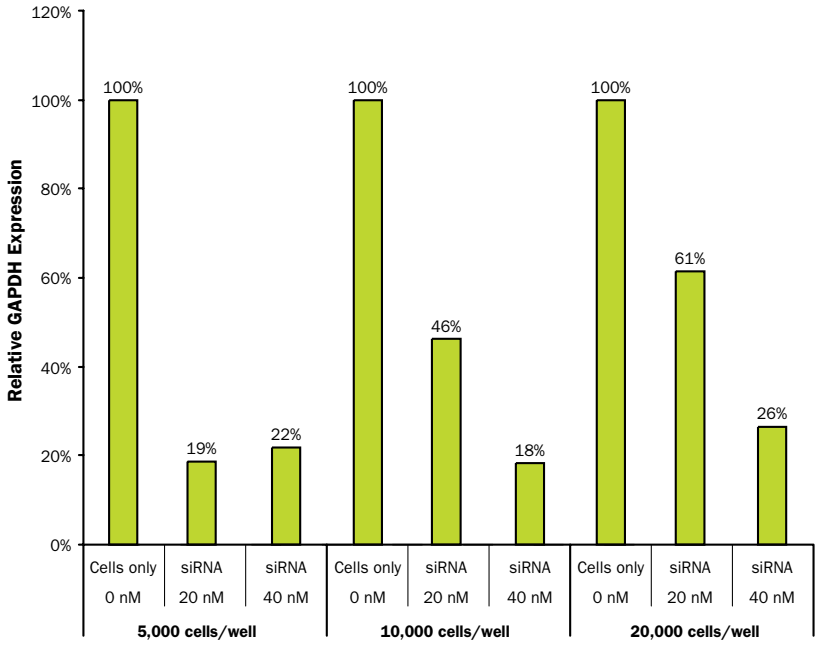
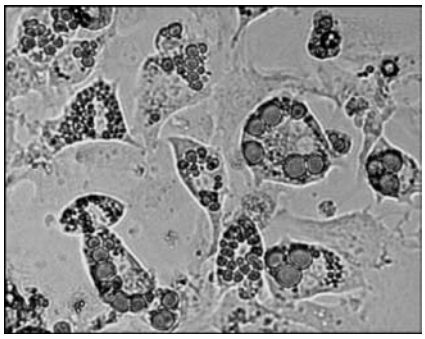


Figure 1: 3T3-L1 pre-adipocytes were induced to differentiate into adipocytes and transfected with GAPDH siRNA using DeliverX Plus siRNA Transfection Kit. Adipocytes were lysed 24 hours post transfection and the mRNA level of GAPDH and PPIB were directly measured without RNA purification and amplification, using the QuantiGene Reagent System. The data was normalized to a GAPDH negative siRNA control. Relative cell viability was ≥ 70% for all conditions evaluated.

Before Transfection



After Transfection

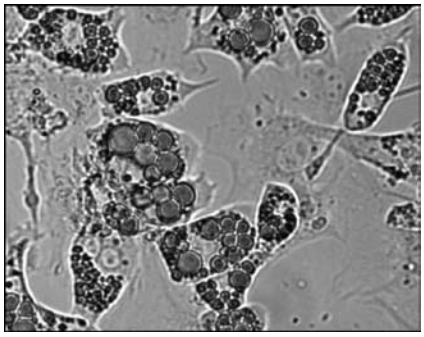


Figure 2: Differentiated 3T3-L1 adipocyte cell morphology before and 24 hours post transfection.

For pricing and more information visit our website at www.panomics.com or call us at 1.877.726.6642.

We are always pleased to talk to customers regarding transfection of specific cell types of interest, contact us at 1.877.726.6642 or techsupport@panomics.com.

References

1. Morris, M.C., Vidal, P., Chaloin, L., Heitz, F., Divita, G., A new peptide vector for the efficient delivery of oligonucleotides into mammalian cells, Nucleic Acids Res., 25, 2730-2736, (1997).

2. Morris, M.C., Chaloin, L., Mery, J., Heitz, F., Divita, G., A novel potent strategy for gene delivery using a single peptide vector as a carrier, Nucleic Acids Res., 27, 3510-3517, (1999).

3. Simeoni, F., Morris, M.C., Heitz, F., Divita, G., Insight into the mechanism of the peptide-based gene delivery system MPG: implications for delivery of siRNA into mammalian cells, Nucleic Acids Res., 31, 2717-2724, (2003).

4. Deshayes, S., Plenat, T., Aldrian-Herrada, G., Divita, G., Grimmellec, C.L., Heitz, F., Primary amphiphatic cell-penetrating peptides: structure requirements and interactions with model membranes, Biochemistry, 43, 7698-7706, (2004).

5. Deshayes, S., Gerbal-Chaloin, S., Morris, M.C., Aldrian-Herrada, G., Charnet, P., Divita, G., Heitz, F., On the mechanism of non-endosomial peptide-mediated cellular delivery of nucleic acids, Biochimica et Biophysica Acta, 1667, 141-147, (2004).

6. Jiang, Z.Y., Zhou, Q.L., Coleman, K.A., Chouinard, M., Boese, Q., Szech, M.P., Insulin signaling through Akt/protein kinase B analyzed by small interfering RNA-mediated gene silencing, PNAS, 100, 7569-7574, (2003).

Product	Size	Catalog No.
DeliverX siRNA Transfection Evaluation Kit*	0.12 mL	DX0001
DeliverX siRNA Transfection Kit	0.4 mL	DX0002
DeliverX siRNA Transfection Kit	1.0 mL	DX0003
DeliverX siRNA Transfection Kit	4 x 1.0 mL	DX0004
DeliverX Plus siRNA Transfection Evaluation Kit**	0.12 mL	DX0051
DeliverX Plus siRNA Transfection Kit	0.4 mL	DX0052
DeliverX Plus siRNA Transfection Kit	1.0 mL	DX0053
DeliverX Plus siRNA Transfection Kit	4 x 1.0 mL	DX0054
FAM-labeled siRNA Control	0.12 mL	DX0100
Human GAPDH siRNA Control	0.06 mL	DX0101
Sonicator X100	each	DX0400

***DeliverX siRNA Transfection Evaluation Kits are configured for new users and contain the following:**
– 0.12 mL DeliverX siRNA Transfection Reagent
– 0.16 mL FAM-labeled siRNA Control
– 0.06 mL Human GADPH siRNA Control

****DeliverX Plus siRNA Transfection Evaluation Kits are configured for new users and contain the following:**
– 0.12 mL DeliverX Plus siRNA Transfection Reagent and validated cell type specific protocols
– 0.16 mL FAM-labeled siRNA Control
– 0.06 mL Human GADPH siRNA Control

Panomics

www.panomics.com

U.S. Corporate Headquarters
Panomics, Inc.
6519 Dumbarton Circle
Fremont, CA 94555
Toll Free: 877 PANOMICS (1.877.726.6642)
Direct: 1.510.818.2600
Fax: 1.510.818.2610
Email: info@panomics.com
Email: orders@panomics.com
Email: techsupport@panomics.com

European Headquarters
Panomics Srl
Via Sardegna 1
20060 Vignate-Milano (Italy)
Tel: +39.02.95.360.250
Fax: +39.02.95.360.992
Email: info_europe@panomics.com
Email: order_europe@panomics.com
Email: techsupport_europe@panomics.com