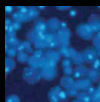
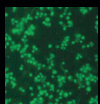


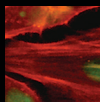
## Thermo Scientific Dharmacon RNAi Control Reagents



**Reliable.** Validated RNAi controls to ensure experimental reproducibility



**Complete.** Broad selection for multiple experimental applications



**Trusted.** Provided to you by the worldwide leader in RNAi technologies



## Are experimental variables affecting your RNAi results? Take control.

Thermo Scientific Dharmacon RNAi control reagents provide everything you need for high-quality, reproducible results.

### Functionality

*Is the siRNA mechanism actively engaged?*

*Positive controls aid in monitoring efficiency of RNAi*

### Specificity

*Are there sequence-independent effects on gene levels?*

*Negative controls distinguish non-sequence specific effects*

### Delivery

*Are there effective siRNA uptake conditions?*

*Transfection controls provide an unmistakable signal of efficient uptake*

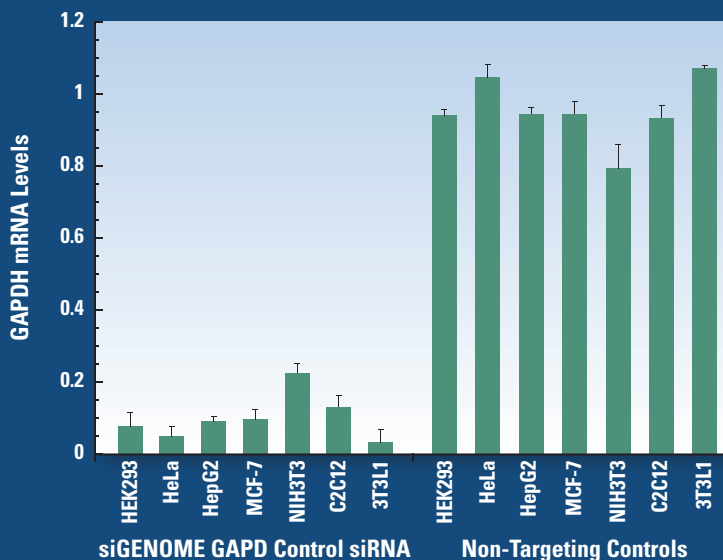


## RNAi positive controls: Assurance of knockdown success

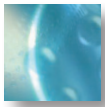
Thermo Scientific Dharmacon ON-TARGET<sup>plus</sup> and siGENOME positive control siRNA and pools provide potent and reliable knockdown of housekeeping genes to verify experimental success.

- All siGENOME<sup>®</sup> positive controls are highly effective in numerous cell lines across species.
- ON-TARGET<sup>plus</sup><sup>™</sup> controls provide high silencing specificity and are chemically matched for experiments with ON-TARGET<sup>plus</sup> reagents.

*RNAi controls give reliable, consistent results across cell lines*



*GAPD mRNA levels were quantified in human and mouse cell lines (24 hours post-transfection, 100 nM siRNA); siGENOME GAPD Control siRNA (D-001830-01, D-001830-02), non-targeting controls (D-001210-01, D-001206-13). Values were normalized to lipid alone (+/- SD n=3).*



## RNAi negative controls: A baseline for silencing specificity

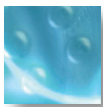
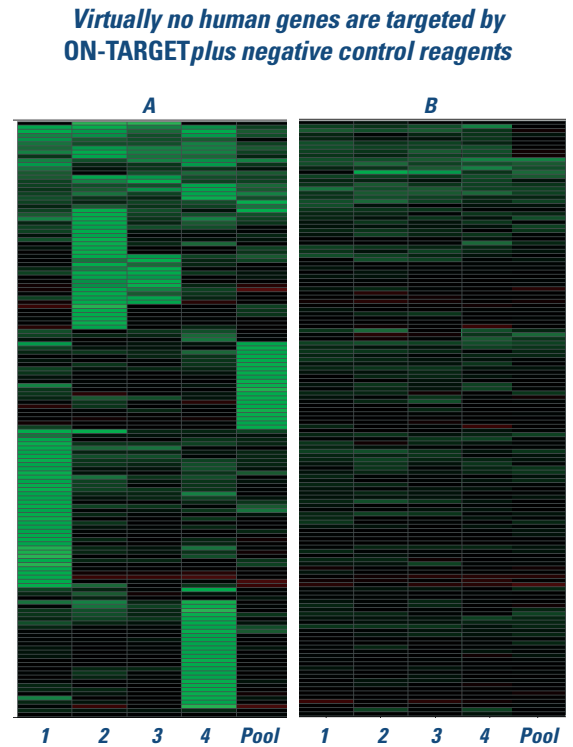
Since every cell system is different, we offer a broad selection of non-targeting siRNAs to let you find the best negative control in your experiment.

- ON-TARGET<sup>plus</sup> negative controls leverage the latest findings in seed-region interactions. These state-of-the-art designs reduce off-target events to a nearly undetectable level and are far superior to reagents selected by sequence homology alone.
- siGENOME non-targeting controls are the most widely used negative control siRNAs available.

(A) Off-target signatures of siRNAs designed to have no homology to any known human gene in the RefSeq database (at least three mismatches)

(B) Off-target signatures of ON-TARGET<sup>plus</sup> Non-targeting siRNA 1-4 and Pool (D-1810-01, -02, -03, -04, -10), which further utilize seed region-based informatics to prevent off-target effects

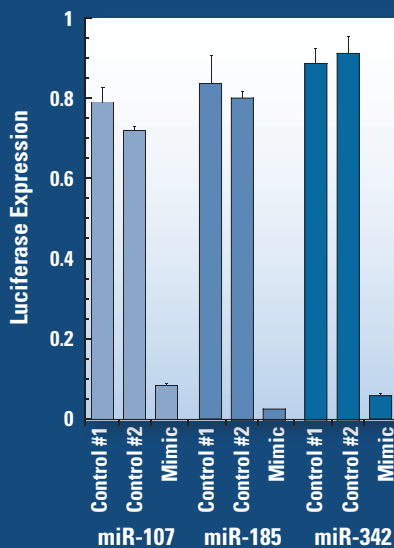
RNA samples from HeLa cells were analyzed by expression profiling using the Agilent Human 1A microarray 24 hours after transfection with the indicated siRNA reagents.



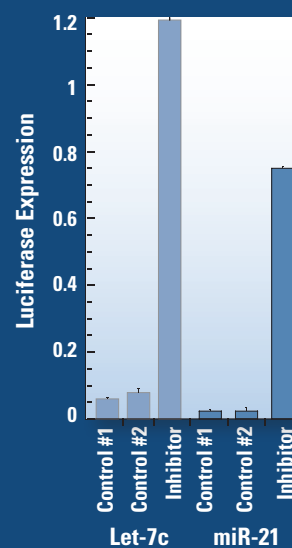
## microRNA negative controls

microRNA negative controls allow distinction between mimic or inhibitor activity and background effects in miRNA experiments.

- Controls specifically designed to accompany experiments with Thermo Scientific Dharmacon miRIDIAN microRNA Mimics and Inhibitors.
- No identifiable effects on tested miRNA function in multiple human cell lines.



*miRIDIAN<sup>®</sup> microRNA Mimic Negative Controls effects on three human miRNAs were assayed at 24 hours after transfection of 10 nM mimic or negative controls in HeLa cells using a dual luciferase reporter system.*



*miRIDIAN<sup>®</sup> microRNA Inhibitor Negative Controls effects on two human miRNAs were assayed at 24 hours after transfection of 50 nM inhibitor or negative controls in HeLa cells using a dual luciferase reporter system.*



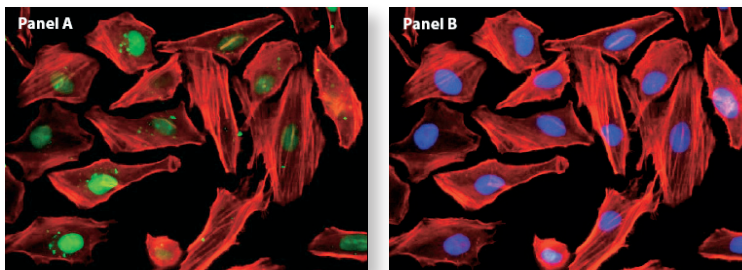
## Transfection Indicators: Visualize optimal RNAi results

Thermo Scientific Dharmacon siGLO transfection indicators are the ideal controls to assess efficient uptake in every RNAi experiment for high confidence results.

- Unique modifications to these controls result in signal accumulation to the nucleus. This provides high signal intensity and superior visualization compared to other labeled siRNAs.
- siGLO<sup>®</sup> transfection indicators will not compete with functional siRNA when co-transfected, making them ideal for tracking delivery and phenotypic changes.

siGLO Transfection Indicator	Fluorophore (Absorbance/Emission Max)	Filter
siGLO Green	6-FAM (494/520 nm)	FITC
siGLO Red	DY-547 (557/570 nm)	Cy <sup>™</sup> 3, Rhodamine or PE

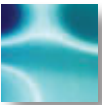
### siGLO Green Transfection Indicator localizes to the nucleus to confirm successful uptake



Panel A illustrates cells successfully transfected with siGLO Green that are readily distinguished from non-transfected cells.

Panel B is the same field of cells stained with a nuclear specific dye (blue nuclei; Hoechst 33342).

HeLa cells (5k) transfected with siGLO Green (20 nM) complexed with DharmaFECT<sup>®</sup> 1 transfection reagent (0.1 µl/well), fixed with 4% paraformaldehyde and stained with phalloidin- Alexa Fluor<sup>®</sup>- 546 conjugate (Molecular Probes) according to manufacturer's protocol.

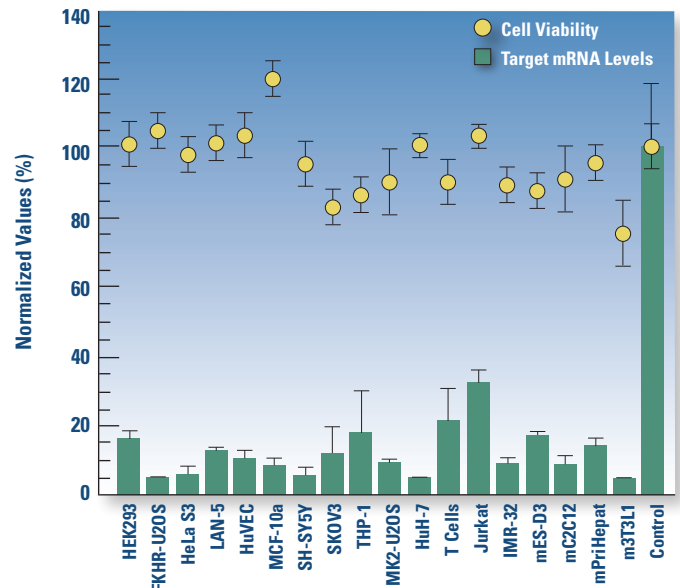


## siRNA delivery into any cell type empowers RNAi innovation

RNAi research no longer is constrained by cell types that are resistant to conventional lipid-based delivery reagents. Thermo Scientific Dharmacon Accell siRNA provides delivery into any cell type for unprecedented experimental flexibility and discovery.

- Effective delivery with no transfection reagent or viral vector required
- Novel siRNA modifications for uptake, stability, and specificity
- Proven performance in primary, differentiated, and other difficult-to-transfect cell types

### Accell<sup>™</sup> siRNA provides reproducible, reliable results across cell lines



Accell siRNA reagents deliver effective knockdown without cytotoxicity. Eighteen cell lines were treated with 1 µM Accell Cyclophilin B control siRNA in Accell delivery media and assayed for knockdown at 72 hours.

mRNA expression was determined by QuantiGene branched DNA assay (Panomics) and cell viability was determined by alamarBlue (Biosource International).

### Special Introductory Offer:

#### Accell Control siRNA Kits

- Two validated Negative Control siRNAs
- Two validated Positive Control siRNAs (including your choice or fluorescent control)
- 5X Buffer for resuspension of siRNA
- Accell Delivery Media

Save over 30% compared to purchase of individual components!



## A complete product line for every experimental need

In addition to our product-line based controls, we offer additional specialty controls for unique experimental needs. Browse the online Dharmacon product catalog for the full selection at [www.thermo.com/dharmaconrnaicontrols](http://www.thermo.com/dharmaconrnaicontrols)

- **Thermo Scientific Dharmacon siSTABLE Reagents: Stability-enhanced RNAi controls**  
 Chemically modified to extend siRNA stability in nuclease-rich environments. Ideally suited for use with siSTABLE siRNA reagents.
- **Thermo Scientific Dharmacon RISC-Free siRNA: More accurate than a lipid-only control**  
 This control cannot be taken up by RISC, thereby providing a more accurate assessment of lipid: siRNA conjugate effects on the cell that are independent of the RNAi mechanism.
- **Additional Positive Controls: For reporter gene knockdown**  
 High-quality siRNA to target common reporter genes like  $\beta$ -galactosidase, luciferase, and GFP. Browse the online Dharmacon product catalog for the full selection.

RNAi Positive and Negative Control Reagents						
Positive Control Reagents		Human	Mouse	Rat	Negative Control Reagents	
siGENOME Cyclophilin B Control siRNA	D-001136-01-xx				siGENOME RISC-Free siRNA	D-001220-01-xx
siGENOME GAPD Control siRNA	D-001140-01-xx				siGENOME Non-targeting siRNA (#1-5)	D-001210-01,-02,-03,-04,-05-xx
siGENOME Lamin A/C Control siRNA	D-001050-01				siGENOME Non-targeting Pools (#1,2)	D-001206-13,-14-xx
siSTABLE Cyclophilin B Control siRNA	D-001710-02-xx	D-001710-03-xx			siSTABLE Non-targeting siRNA #1	D-001700-01-xx
siSTABLE GAPD Control siRNA	D-001720-03-xx				siGLO Transfection Indicators (Green & Red)	D-001630-01,02-xx
siGLO Cyclophilin B Control siRNA	D-001610-01-xx				siGLO RISC-Free siRNA	D-001600-01-xx
siGLO Lamin A/C Control siRNA	D-001620-02-xx	D-001620-03-xx	D-001620-04-xx		ON-TARGET <sup>plus</sup> Non-targeting siRNA (#1-4)	D-001810-01,-02,-03,-04-xx
ON-TARGET <sup>plus</sup> Cyclophilin B Control siRNA	D-001820-01-xx	D-001820-02-xx	D-001820-03-xx		ON-TARGET <sup>plus</sup> Non-targeting Pool	D-001810-10-xx
ON-TARGET <sup>plus</sup> Cyclophilin B Control Pool	D-001820-10-xx	D-001820-20-xx	D-001820-30-xx		miRIDIAN miRNA Inhibitor Negative Control #1	IN-001000-01-x
ON-TARGET <sup>plus</sup> GAPD Control siRNA	D-001830-01-xx				miRIDIAN miRNA Inhibitor Negative Control #2	IN-002000-01-xx
ON-TARGET <sup>plus</sup> GAPD Control Pool	D-001830-01-xx				miRIDIAN miRNA Mimic Negative Control #1	CN-001000-01-xx
					miRIDIAN miRNA Mimic Negative Control #2	CN-002000-01-xx

xx = 05 (5 nmol) or 20 (20 nmol)

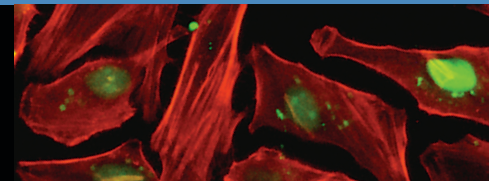
Accell siRNA Controls			
Description	Kit Catalog #	Accell Control Kits	
Accell siRNA Human Control Kit (Green)	K-005000-G1-01	All kits contain:	1.5 mL 5x siRNA buffer
Accell siRNA Mouse Control Kit (Green)	K-005000-G1-02		100 mL Accell delivery media
Accell siRNA Rat Control Kit (Green)	K-005000-G1-03		5 nmol Accell Non-targeting siRNA
Accell siRNA Human Control Kit (Red)	K-005000-R1-01	Choice of:	5 nmol Accell Green <u>or</u> Red Non-targeting siRNA
Accell siRNA Mouse Control Kit (Red)	K-005000-R1-02	Species-specific:	5 nmol GAPD siRNA
Accell siRNA Rat Control Kit (Red)	K-005000-R1-03		5 nmol Cyclophilin siRNA

Positive Controls		Fluorescent Positive Controls	
Description	Catalog #	Description	Catalog #
Accell Human Cyclophilin B Control siRNA	D-001920-01-xx	Accell Human (Green) Cyclophilin B siRNA	D-001970-01-xx
Accell Mouse Cyclophilin B Control siRNA	D-001920-02-xx	Accell Mouse (Green) Cyclophilin B siRNA	D-001970-02-xx
Accell Rat Cyclophilin B Control siRNA	D-001920-03-xx	Accell Rat (Green) Cyclophilin B siRNA	D-001970-03-xx
Accell Human Cyclophilin B Pool	D-001920-10-xx	Accell Human (Red) Cyclophilin B siRNA	D-001975-01-xx
Accell Mouse Cyclophilin B Pool	D-001920-20-xx	Accell Mouse (Red) Cyclophilin B siRNA	D-001975-02-xx
Accell Rat Cyclophilin B Pool	D-001920-30-xx	Accell Rat (Red) Cyclophilin B siRNA	D-001975-03-xx
Accell Human GAPD Control siRNA	D-001930-01-xx	Negative Controls	
Accell Mouse GAPD Control siRNA	D-001930-02-xx	Description	Catalog #
Accell Rat GAPD Control siRNA	D-001930-03-xx	Accell Negative Control siRNA #1-4	D-001910-01, 02, 03, 04-xx
Accell Human GAPD Pool	D-001930-10-xx	Accell Negative Control Pool	D-001910-10-xx
Accell Mouse GAPD Pool	D-001930-20-xx	Accell (Green) Negative Control siRNA	D-001950-01-xx
Accell Rat GAPD Pool	D-001930-30-xx	Accell (Red) Negative Control siRNA	D-001960-01-xx
Accell GFP Control siRNA	D-001940-01-xx		

xx = 05 (5 nmol) , 20 (20 nmol), 50 (50 nmol)



# Thermo Scientific Dharmacon RNAi Control Reagents



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Technical support: +44 1372 840410

Euro Literature # PB 2007 17

US Literature #00146-08-C-03-U

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