Altogen Labs

Provider of Preclinical Research Services (GLP/non-GLP) for Drug Discovery
Efficacy and Pharm/Tox IND contract research studies (clients worldwide)
100+ Xenograft Models (validated in-house) and IND-enabling Toxicology studies
100% IP belongs to client, experienced IACUC-regulated barrier facility

Targeted siRNA qPCR Assays

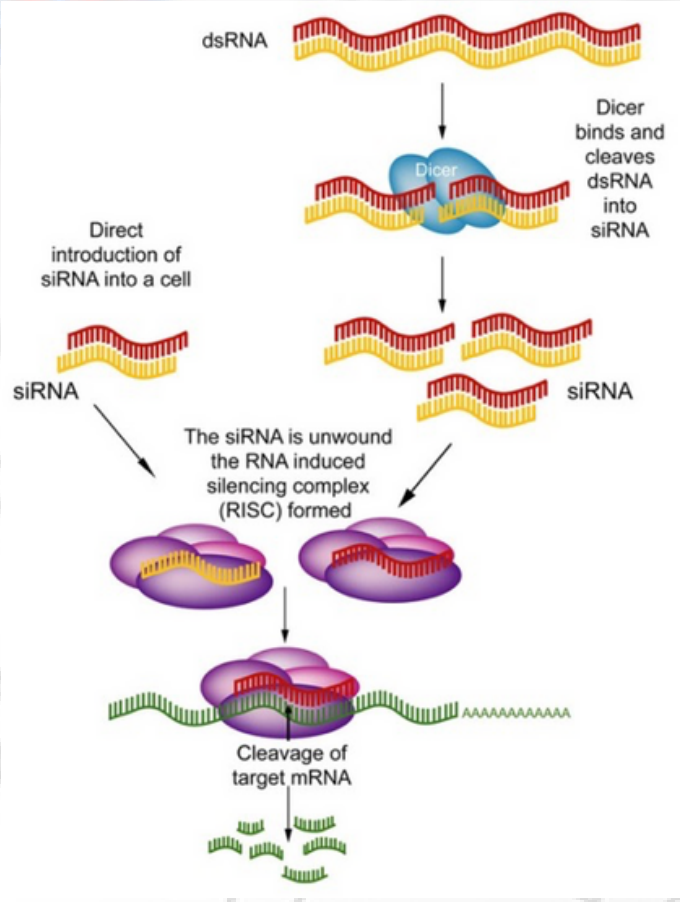
Contact us: **info@altogenlabs.com** | Read more at **AltogenLabs.com**
ALTOGEN® 11200 Menchaca Road 203 • Austin • TX • 78748 • USA 512-433-6177

RNA Interference and qPCR Assays

1. Introduction of dsRNA into the cell triggers cleavage by Dicer to yield siRNAs

2. RISC binds to, processes, incorporates siRNA

3. RISC uses siRNA to seek out complementary sequences and degraded them – silencing gene expression



http://zimdarsgen564s14.weebly.com/rna-interference.html

RNA Interference and Drug Discovery

- Specific, targeted gene silencing
- Expression is significantly reduced, but not eliminated (gene knockout)
- Represents an exploding field of Drug Discovery

1. Identifying drug targets
2. Elucidating cellular signaling pathways

- Applications with novel drug discovery but also RNA-based drugs

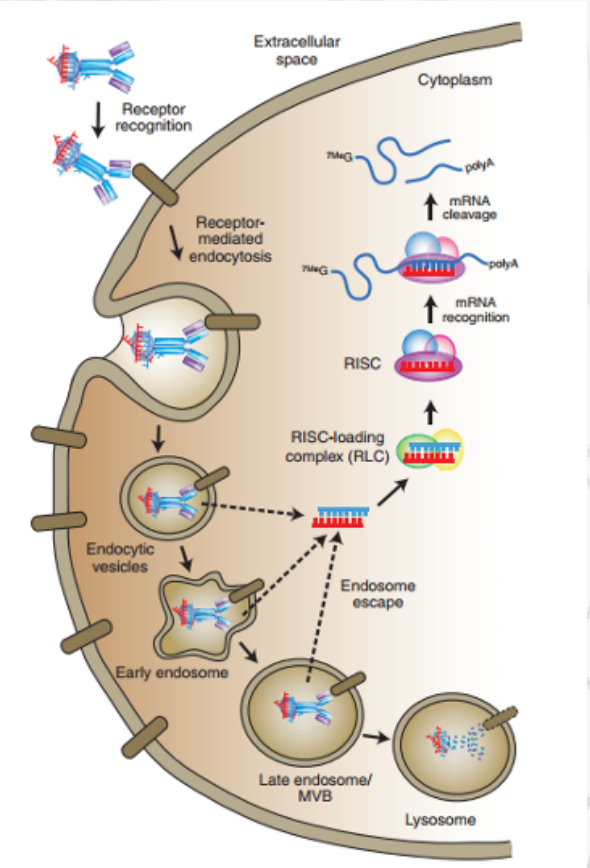
Challenges of RNA Interference

Delivery:

- Exogenous dsRNA gaining entry to the cell
- Escaping from the endosome

Stability of dsRNA:

- Avoiding degradation to induce RNAi silencing

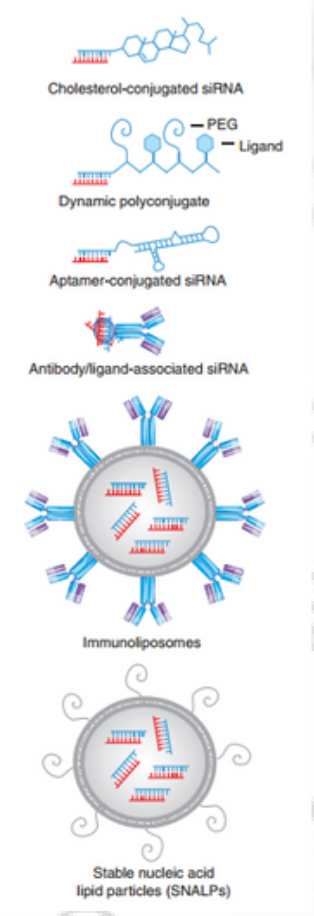


Celluar delivery of siRNA

Monika Dominska, Derek M. Dykxhoorn J Cell Sci 2010 123: 1183-1189

Efficient RNA Delivery

- Altogen Labs is experienced in efficient delivery of RNA to produce targeted gene silencing via the RNA interference pathway (liposomal encapsulation and chemical modification RNA)
- Altogen Labs has extensive knowledge and expertise of encapsulation and modification for efficient delivery of RNA

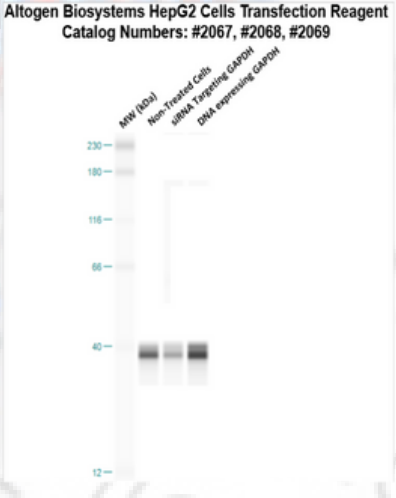


Different RNA modification/encapsulation methods for enhancing delivery

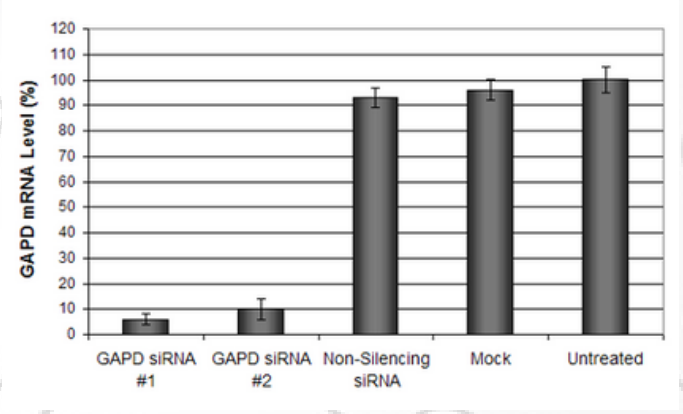
Monika D., Dykxhoorn, D.M. J Cell Sci 2010 123: 1183-1189

Representative In Vitro RNAi Knockdown

- siRNA is delivered to target cell line via cationic transfection reagent
- Knockdown efficiency is evaluated by RT-PCR (mRNA) and Western Blot (mRNA)



HepG2 cells transfected with siRNA targeting Glyceraldehyde-3-Phosphate Dehydrogenase



Post-transfection data displaying targeted knockdown of GAPD mRNA (RT-PCR, top) and protein expression (right)

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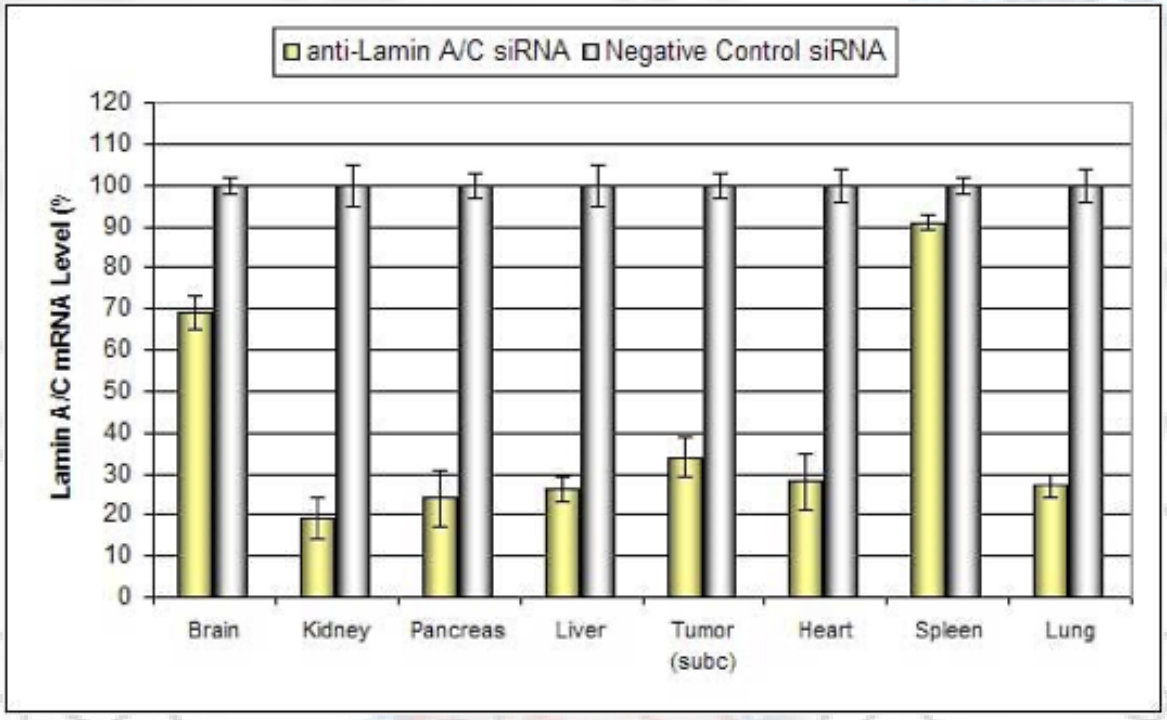
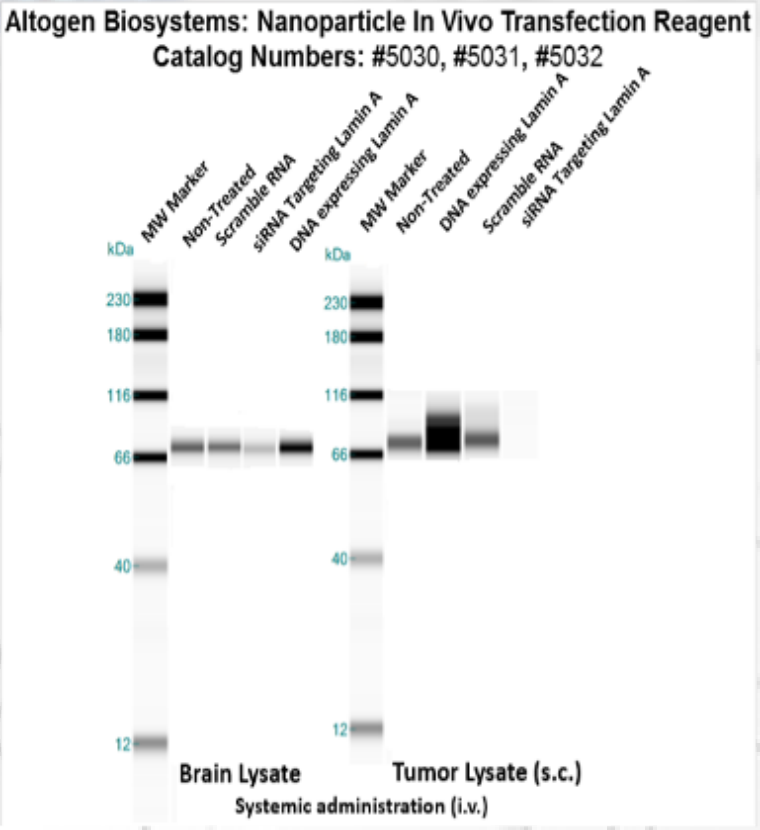
Representative In Vivo RNAi Knockdown

- siRNA is introduced via nanoparticle-based reagent intravenously (IV) or intratumorally (IT)
- Knockdown efficiency is evaluated by RT-PCR (mRNA) and Western Blot (mRNA) on tissue and tumor lysates

Systematic administration of anti-Lamin A/C siRNA





Post-intravenous injection data displaying targeted knockdown of Lamin A/C (RT-PCR, top) and protein expression (right)

Contact Us

Altogen Labs RNAi Services:

- Targeted gene silencing via siRNA
- Analytical methods to characterize reduction in mRNA concentration (RT-PCR) and concurrent knockdown in protein expression (Western Blot)
- Cell-based assays
- In vitro and in vivo RNA stability studies
- RNA chemical modification and encapsulation

Contact us to discuss details, timeline estimates, and price!

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