

Markers **NEWS**

RNAi: From Nantech, MDRNA Launches; Aims for Clinical Trials by Late Next Year

MDRNA has appeared on the horizon as another RNAi-focused company hoping to make good on the promise of using RNA interference to develop safe and effective RNA-based therapeutics. As part of a shift in business focus, the 55-person Bothell, Wash.-based company changed its name this summer from Nantech to MDRNA. Run by CEO Michael French, MDRNA's goal is to develop novel compounds and unique drug delivery techniques, aiming to get its lead candidate into

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phase I clinical trials by the end of 2009.

“We have transitioned from a clinical-stage delivery company to a drug discovery-stage biotech therapeutics company,” French says. “So right now we're solely focused on the discovery and pre-clinical development

of RNAi-based therapeutics.”

Currently the company's research spans three therapeutic areas: metabolic disorders, specifically hypercholesterolemia; oncology, in bladder and lung cancer; and inflammation, where the target is TNF-alpha and the indications are for rheumatoid arthritis and inflammatory bowel disorder.

“Our focus is on developing novel RNAi-based compounds, which include, by necessity, some kind of delivery capability,” French says. Novel compounds include Dicer substrates, licensed from the City of Hope, and proprietary three-stranded short interfering molecules that MDRNA calls meroduplexes.

Improving delivery is a key hurdle for the field, and MDRNA has a few tricks up its sleeve. The company has created its own liposomal delivery



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platform, in which the siRNA construct is embedded inside a lipid sphere that serves as a transport vessel for delivery of the knockdown molecule. The team has already shown this method to work *in vivo* on apolipoprotein B mRNA in mouse models.

Recently, MDRNA licensed technology from the University of Michigan to help improve delivery even more. “One of the ways that we're looking at improving delivery is to utilize peptides as condensing agents to create nanoparticles,” French says. Michigan's cationic peptides can form stable complexes with the siRNA, thereby creating small nanoparticles that are inserted into the liposomal vessel. This way, delivery is both increased and improved. “The concept is that we can create higher concentrations of the siRNAs inside the liposomes with the peptide,” he adds.

The company is in the process of seeking therapeutic partnerships.

— Jeanene Swanson

