# Targeted gene silencing drugs are more than 500 times more effective with new delivery method

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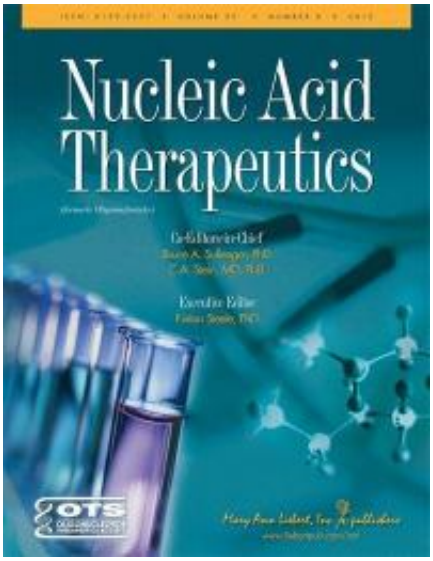




Small interfering RNAs (siRNAs) are a potent new drug class that can silence a disease-causing gene, but delivering them to a target cell can be challenging. An innovative delivery approach that dramatically increases the efficacy of an siRNA drug targeted to the liver and has made it possible to test the drug in non-human primates is described in an article in *Nucleic Acid Therapeutics*.

In the article "Co-Injection of a Targeted, Reversibly Masked

Endosomolytic Polymer Dramatically Improves the Efficacy of Cholesterol-Conjugated Small Interfering RNAs In Vivo" (http://online.liebertpub.com/doi/full/10.1089/nat.2012.0389) Wong and colleagues from Arrowhead Madison Inc. (Madison, WI) present a novel strategy to overcome the difficulty in delivering high levels of a gene knockdown siRNA drug to liver cells. While the cholesterol-conjugated siRNA drug is taken up preferentially by the liver, it is encapsulated in membrane-bound globules called endosomes and cannot reach the cells' DNA to exert its gene silencing effect. The researchers co-injected a polymer with the drug that also targets the liver and, once inside liver cells, breaks open the endosomes, releasing the siRNA drug.

"The promise of siRNAs is as strong as ever and is becoming even more so with progress in delivering these molecules to the right place at the right time," says Executive Editor Fintan Steele, PhD, SomaLogic, Inc., Boulder, CO. "The work by Wong and colleagues is another important step towards realizing this promise."

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