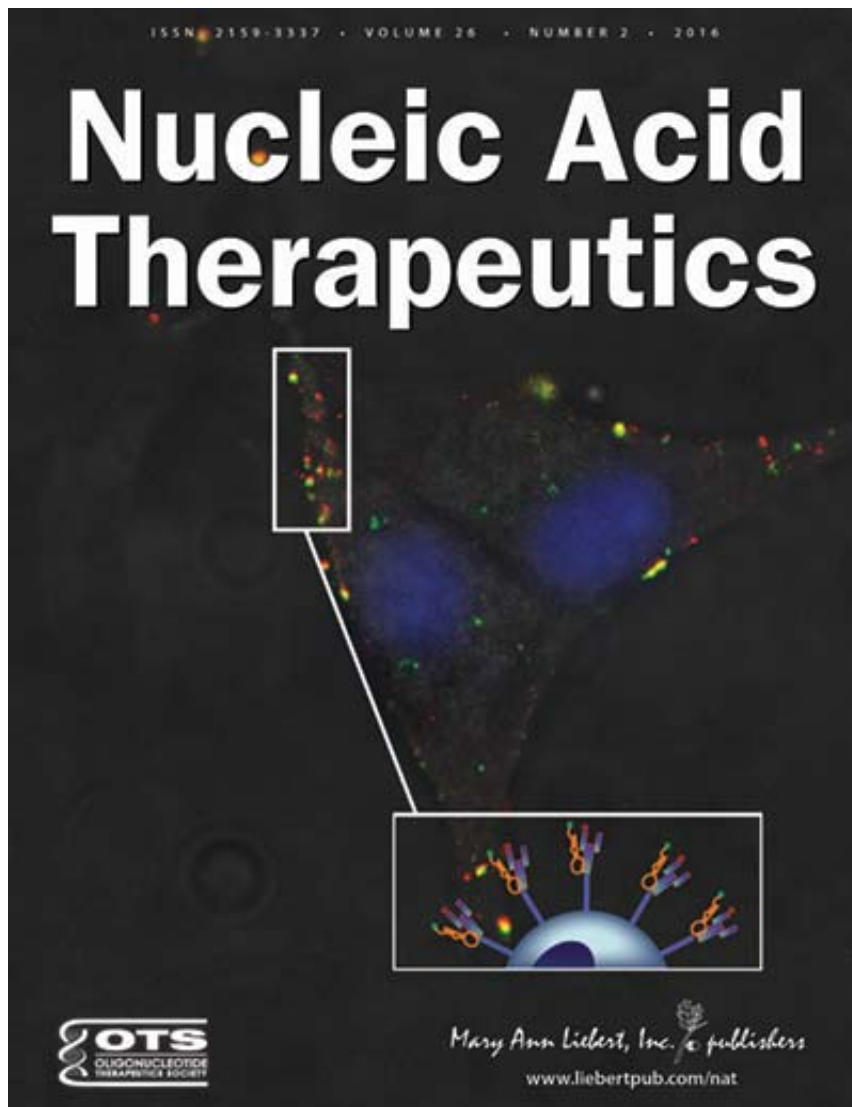


# More potent, inexpensive gene silencing agents described

May 12 2016

---



Credit: Mary Ann Liebert, Inc., publishers

Combining the therapeutic potential and advantages of existing oligonucleotide-based approaches to turn off disease-related genes, a type of single-stranded silencing RNAs (ss-siRNAs) has shown significantly improved potency and activity. The chemical modification used to create these novel ss-siRNAs is both inexpensive and readily available to researchers, as described in an article in *Nucleic Acid Therapeutics*.

In "Single-Stranded Silencing RNAs (ss-siRNAs): Hit Rate and Chemical Modification," Hannah Pendergraff, Alexandre Debacker, and Jonathan Watts, University of Southampton, U.K., and UMass Medical School, Worcester, present the key features of ss-siRNAs. These compounds combine the advantages of the two established mechanisms of gene silencing being used in nucleic acid-based drug development: single-stranded antisense oligonucleotides, and duplex RNA interference (siRNA). The researchers' attempts to develop and optimize ss-siRNAs based on [chemical modification](#) of active siRNA duplexes led to some compounds that lost their [gene silencing](#) activity and some with increased toxicity. One modification, however, led to increased silencing activity without affecting toxicity.

"Scientific research is resource intensive, and the advances described here help bring within reach tools to allow more researchers to ask and answer therapeutic questions and democratize the research endeavor," says Executive Editor Graham C. Parker, PhD, The Carman and Ann Adams Department of Pediatrics, Wayne State University School of Medicine, Children's Hospital of Michigan, Detroit, MI.

**More information:** Hannah M. Pendergraff et al, Single-Stranded Silencing RNAs: Hit Rate and Chemical Modification, *Nucleic Acid Therapeutics* (2016). [DOI: 10.1089/nat.2015.0557](https://doi.org/10.1089/nat.2015.0557)

Provided by Mary Ann Liebert, Inc

Citation: More potent, inexpensive gene silencing agents described (2016, May 12) retrieved 26 April 2024 from

<https://medicalxpress.com/news/2016-05-potent-inexpensive-gene-silencing-agents.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.