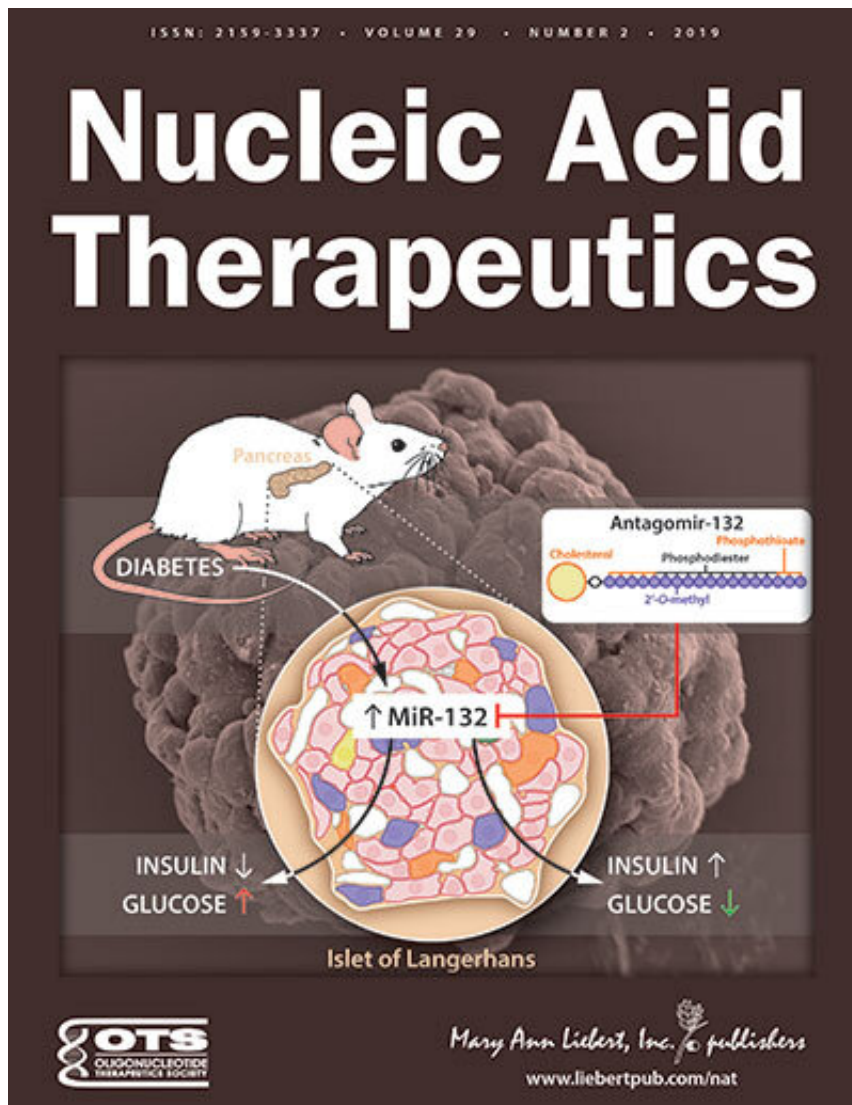


New guidelines push for better controlled experiments with synthetic nucleic acids

April 4 2019



Credit: Mary Ann Liebert, Inc., publishers

Researchers have proposed new guidelines to overcome current problems facing scientists developing synthetic nucleic acids—such as antisense oligonucleotides and double-stranded RNAs—as drugs and research tools. The guidelines, which promote a common set of standards for judging experiments and more efficient use of resources, are published in *Nucleic Acid Therapeutics*.

In the article entitled "Guidelines for Experiments Using Antisense Oligonucleotides and Double-Stranded RNAs" coauthors Keith Gagnon, School of Medicine, Southern Illinois University (Carbondale) and David Corey, UT Southwestern Medical Center at Dallas, TX state that current experimental designs are too often inadequate, leading to misleading interpretation of data and findings that are unsupportable and a waste of resources.

The authors provide practical advice for performing experiments with synthetic nucleic acids, including long noncoding RNAs (lncRNAs) and microRNAs (miRNAs) and present minimum standards for published research. They focus on topics including experimental design, measuring [gene expression](#), measuring cell uptake, selecting controls for cell culture experiments and animal studies, and special cases.

"The issue of proper controls for [oligonucleotide](#) studies has been extensively discussed by the board of the Oligonucleotide Therapeutic Society. This thoughtful set of guidelines has now been endorsed by both the board of the Oligonucleotide Therapeutic Society and the editorial board of *Nucleic Acid Therapeutics*. This paper reinforces our continuing commitment to improving [experimental design](#) and we encourage submission of further commentaries that share this goal," says Executive Editor Graham C. Parker, Ph.D., The Carman and Ann Adams Department of Pediatrics, Wayne State University School of Medicine, Children's Hospital of Michigan, Detroit, MI.

More information: Keith T. Gagnon et al, Guidelines for Experiments Using Antisense Oligonucleotides and Double-Stranded RNAs, *Nucleic Acid Therapeutics* (2019). [DOI: 10.1089/nat.2018.0772](https://doi.org/10.1089/nat.2018.0772)

Provided by Mary Ann Liebert, Inc

Citation: New guidelines push for better controlled experiments with synthetic nucleic acids (2019, April 4) retrieved 25 June 2024 from <https://medicalxpress.com/news/2019-04-guidelines-synthetic-nucleic-acids.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.