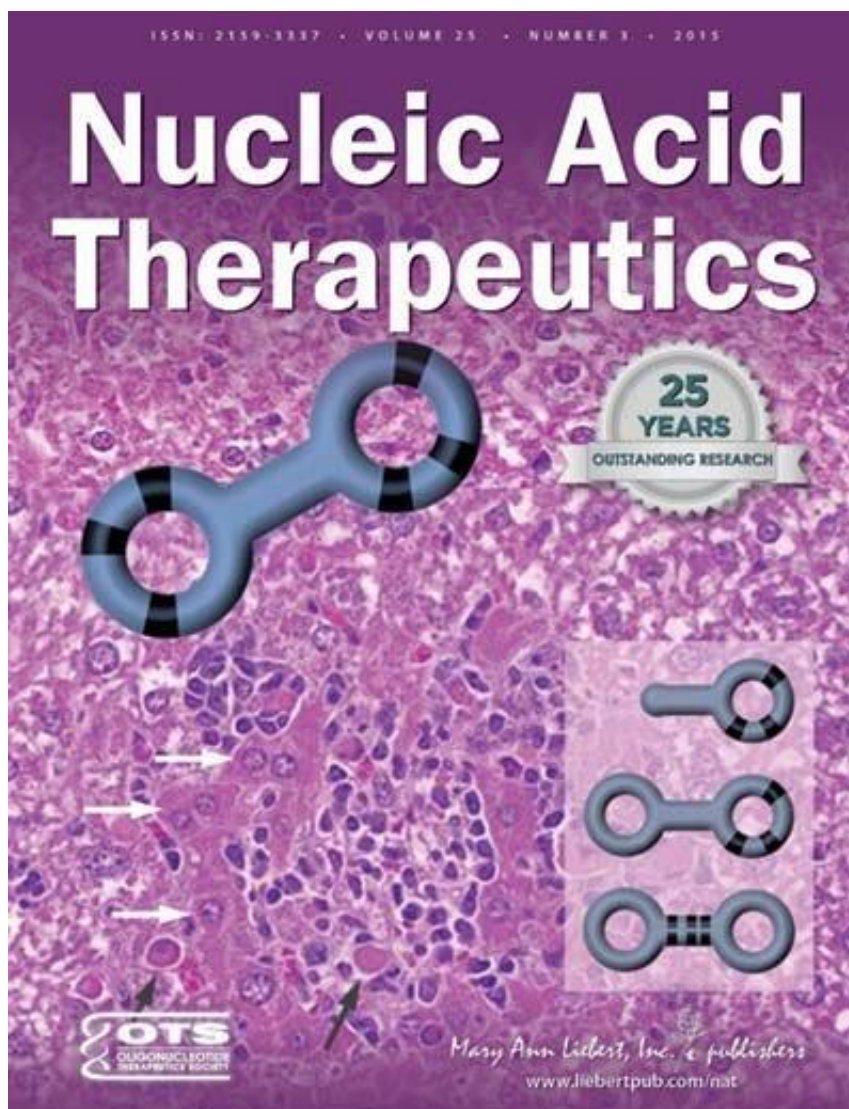


New aptamer-based approach delivers microRNA therapeutic that targets cancer / cardiovascular disease

June 3 2015



Credit: Mary Ann Liebert, Inc., publishers

Researchers have shown that a novel delivery strategy can efficiently introduce a functional microRNA that has anti-cancer and angiogenic activities into two different types of cells—breast cancer cells to inhibit tumor growth and metastasis, and cells that line blood vessels to protect against atherosclerosis. The overexpression of miR-126 using a universal aptamer delivery approach is described in an article in *Nucleic Acid Therapeutics*.

Jan-H Rohde and Stefanie Dimmeler, Goethe University (Frankfurt, Germany) and Julia Weigand and Beatrix Suess, Technical University Darmstadt, Germany, linked the short noncoding RNA miR-126, which is essential for the growth of [blood vessels](#), to an aptamer, a short nucleic acid sequence that delivers the therapeutic microRNA inside target cells. The researchers describe how they formed an aptamer chimera by linking a precursor of miR-126 to an aptamer of the transferrin receptor, which is present on the surface of both normal endothelial cells and cancer cells. Data demonstrating the efficient uptake of the aptamer and processing of the precursor miR-126 to produce a functionally active microRNA are presented in the article ["A Universal Aptamer Chimera for the Delivery of Functional microRNA-126"](#).

"This innovative strategy demonstrates for the first time an aptamer-based modular delivery of microRNA in endothelial and breast [cancer cells](#)," 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: The article is available free on the [Nucleic Acid Therapeutics](#) website until July 3, 2015.

Provided by Mary Ann Liebert, Inc

Citation: New aptamer-based approach delivers microRNA therapeutic that targets cancer / cardiovascular disease (2015, June 3) retrieved 6 May 2024 from <https://medicalxpress.com/news/2015-06-aptamer-based-approach-microrna-therapeutic-cancer.html>

<p>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.</p>
--