

'Gene silencing' may improve treatment of a deadly complication of liver disease

May 27 2009

A technique that “silences,” or turns off, genes shows promise as a potential new treatment for liver fibrosis — the disease that leads to cirrhosis — scientists in Tennessee are reporting. Their study is scheduled for the June 1 issue of ACS’ *Molecular Pharmaceutics*. Cirrhosis is the 12th leading cause of death in the United States.

Ram Mahato and colleagues note that fibrosis involves build-up of scar tissue in the liver from chronic [liver damage](#) caused by hepatitis, [alcohol abuse](#), toxins, or other factors. Advanced fibrosis can lead to cirrhosis, a condition in which the liver becomes so severely damaged that patients may require a transplant. There is no effective treatment, and patients urgently need new medications. Scientists believe one may emerge from the fascinating discovery that a protein called TGF-beta 1 triggers liver inflammation and that blocking the protein may help.

The researchers designed 10 chemically synthesized substances, termed siRNAs, with the ability to block or “silence” the TGF-beta 1 gene in the liver. When put into rat liver cells, the “gene silencers” decreased levels of type 1 collagen whose excessive production leads to fibrosis, as well as two other substances known to trigger liver inflammation, by almost 50 percent. The results suggest that gene silencing may be “an efficient and more specific approach for therapy of liver fibrosis,” the report states.

More information: *Molecular Pharmaceutics*, Journal Article: “TGF-#1 Gene Silencing for Treating [Liver Fibrosis](#)”

Provided by American Chemical Society ([news](#) : [web](#))

Citation: 'Gene silencing' may improve treatment of a deadly complication of liver disease (2009, May 27) retrieved 17 April 2024 from <https://phys.org/news/2009-05-gene-silencing-treatment-deadly-complication.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.