

New target for treating diabetic kidney disease, the leading cause of kidney failure

October 18 2012

Researchers have discovered a new therapeutic target for diabetic nephropathy, the leading cause of kidney failure. The findings, appearing in an upcoming issue of the *Journal of the American Society of Nephrology (JASN)*, could help protect the kidney health of individuals with diabetes.

While it's unclear precisely how diabetic nephropathy—kidney disease or damage that occurs in people with diabetes—develops, inflammation is likely involved. One particular inflammatory molecule, osteopontin, seems to play a prominent role, making it a potential target for future therapies.

In an attempt to inhibit osteopontin expression, Daisuke Ogawa, MD, PhD (Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, in Japan) and his colleagues tried activating a receptor that blocks the expression of genes involved in inflammation. This receptor, liver x receptor (LXR), can be activated with a drug named T0901317.

When [diabetic mice](#) with [kidney damage](#) were given T0901317, the animals' kidneys became healthier and functioned better. Also, the T0901317 treatment markedly decreased the expression of osteopontin and other inflammatory molecules in the kidneys. Laboratory experiments with [kidney cells](#) revealed that high sugar concentrations—like those seen in the blood of diabetics—increased osteopontin expression, which could be inhibited with T0901317.

"These observations support an important role for LXR agonists in suppressing the inflammatory responses in diabetic kidneys and preventing the development of nephropathy," said Dr. Ogawa.

More information: The article, entitled "Activation of Liver X Receptor Inhibits Osteopontin and Ameliorates Diabetic Nephropathy," will appear online on October 18, 2012, [doi: 10.1681/ASN.2012010022](https://doi.org/10.1681/ASN.2012010022)

Provided by American Society of Nephrology

Citation: New target for treating diabetic kidney disease, the leading cause of kidney failure (2012, October 18) retrieved 28 March 2023 from <https://medicalxpress.com/news/2012-10-diabetic-kidney-disease-failure.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.