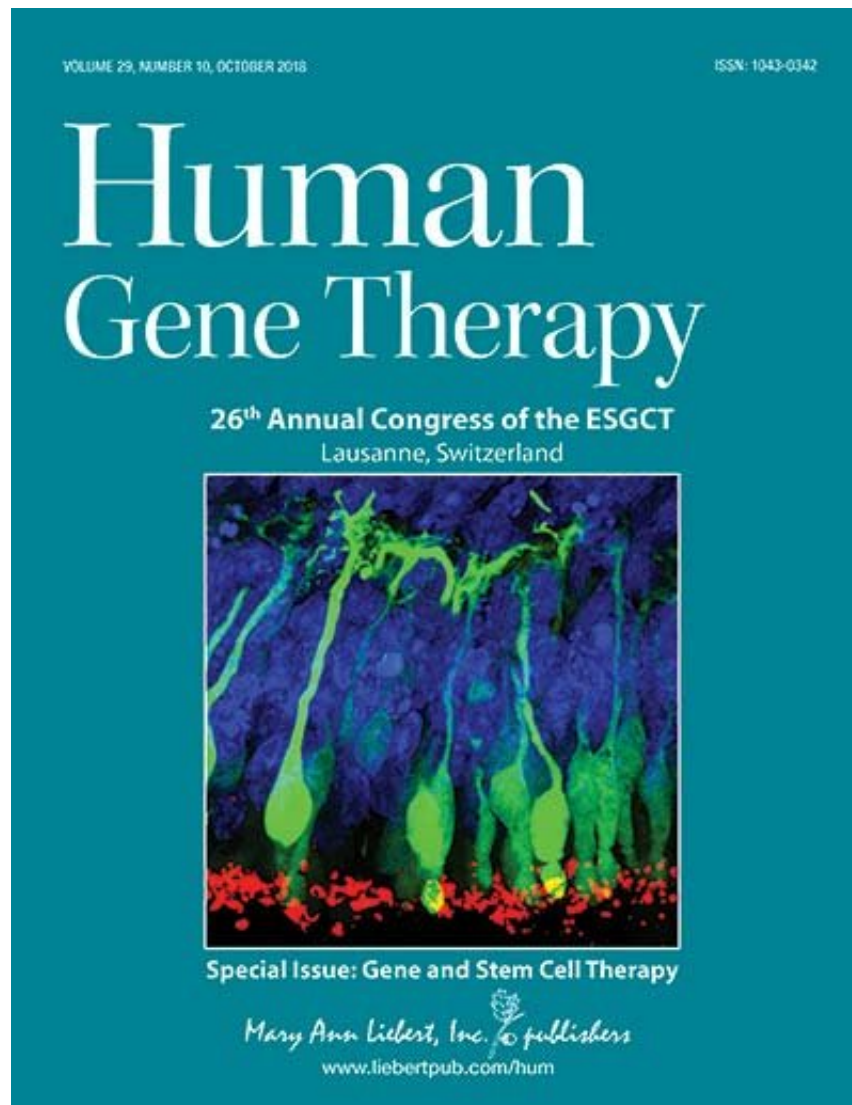


Combination gene therapy more effective in cartilage preservation in osteoarthritis

November 13 2018



Credit: Mary Ann Liebert, Inc., publishers

A combinatorial gene therapy approach- one designed to inhibit inflammation and one targeting protection against cartilage degeneration—was shown to preserve articular cartilage better than each approach alone in animal models of both moderate and severe post-traumatic osteoarthritis. The therapeutic strategy included combined delivery of helper-dependent adenoviruses expressing interleukin-1 receptor antagonist (IL-1Ra) to block inflammation and PRG4 (lubricin) to promote pro-anabolic cartilage genes and decrease expression of catabolic genes, as reported in an article published in *Human Gene Therapy*.

The article entitled "Combinatorial Prg4 and Il-1ra Gene Therapy Protects Against Hyperalgesia and Cartilage Degeneration in Posttraumatic Osteoarthritis," was coauthored by Adrienne Stone, Matthew W. Grol, Brendan H.L. Lee, and a team of researchers from Baylor College of Medicine, Houston, TX. The researchers used two surgical techniques to model moderate and severe post-traumatic osteoarthritis. They found that the combination [gene therapy](#) led to improved cartilage preservation compared to monotherapy in both animal models.

"Osteoarthritis is one of the most prevalent potential targets for gene therapy, and its prevalence is increasing with the aging of the population," says Editor-in-Chief Terence R. Flotte, MD, Celia and Isaac Haidak Professor of Medical Education and Dean, Provost, and Executive Deputy Chancellor, University of Massachusetts Medical School, Worcester, MA. "The relatively easy access to the joint space, and its relatively compartmentalized structure could make it an ideal target for localized gene therapy such as this."

More information: Adrienne Stone et al, Combinatorial Prg4 and Il-1ra Gene Therapy Protects Against Hyperalgesia and Cartilage Degeneration in Post-Traumatic Osteoarthritis, *Human Gene Therapy*

(2018). [DOI: 10.1089/hum.2018.106](https://doi.org/10.1089/hum.2018.106)

Provided by Mary Ann Liebert, Inc

Citation: Combination gene therapy more effective in cartilage preservation in osteoarthritis
(2018, November 13) retrieved 26 April 2024 from
<https://medicalxpress.com/news/2018-11-combination-gene-therapy-effective-cartilage.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.