

This week in therapeutics

Indication	Target/marker/pathway	Summary	Licensing status	Publication and contact information
Musculoskeletal disease				
Cartilage repair	Piezo-type mechanosensitive ion channel component 1 (PIEZO1); PIEZO2	Cell and tissue culture studies suggest inhibiting PIEZO1 and PIEZO2 could prevent load-induced articular cartilage damage. In mice, chondrocytes expressed higher levels of Piezo1 and Piezo2 than several other tissue types. In primary pig chondrocytes subjected to external pressure, Ca ²⁺ influx levels correlated with applied pressure, and siRNA against <i>PIEZO1</i> or <i>PIEZO2</i> or treatment with the PIEZO1 and PIEZO2 inhibitor GsMTx4 decreased Ca ²⁺ influx compared with scrambled control siRNAs or vehicle treatment. In <i>ex vivo</i> pig cartilage tissue subjected to mechanical injury, pretreatment with GsMTx4 decreased cell death compared with vehicle. Next steps include testing intra-articular delivery of GsMTx4 in a mouse model of medial meniscus knee joint instability.	Unpatented; licensing status not applicable	Lee, W. <i>et al. Proc. Natl. Acad. Sci. USA</i> ; published online Nov. 10, 2014; doi:10.1073/pnas.1414298111 Contact: Wolfgang B. Liedtke, Duke University Medical Center, Durham, N.C. e-mail: wolfgang@neuro.duke.edu Contact: Farshid Guilak, same affiliation as above e-mail: guilak@duke.edu
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