New lentivirus-based tool assesses effect of Wnt/beta-Catenin signaling on bone regeneration

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Researchers have developed a novel tool for determining the sensitivity of bone healing to inhibition of the Wnt signaling pathway and have validated its use in a study of bone regeneration in mice. The tool, which is based on a lentivirus encoding a ß-catenin shRNA model, is described in an article published in *Tissue Engineering, Part A*.

Aaron James, MD, Ph.D., Johns Hopkins University (JHU, Baltimore, MD) and coauthors from JHU, China Medical University (Shenyang), University of California San Diego, School of Medicine, University of California Los Angeles, UCLA School of Dentistry, and UCLA David Geffen School of Medicine report their findings in the article entitled "Frontal Bone Healing Is Sensitive to Wnt Signaling Inhibition Via Lentiviral Encoded Beta-Catenin Short Hairpin RNA." Their lentiviral model allows for specific and localized inhibition of the Wnt/ß-Catenin signaling pathway, which plays a critical role in skeletal biology. Researchers can use the model to determine the effect of Wnt/ß-Catenin inhibition on bone maintenance and regeneration during bone repair.

"The continued development of gene therapy approaches is critical to the success of the regenerative medicine field. The work presented here by Dr. James and his collaborators demonstrates a critical success in this field and its particularly important application in bone tissue engineering ," says *Tissue Engineering* Co-Editor-in-Chief John P. Fisher, Ph.D., Fischell Family Distinguished Professor & Department Chair, and Director of the NIH Center for Engineering Complex Tissues at the University of Maryland, College Park.

More information: Lei Zhang et al, Frontal Bone Healing Is Sensitive to Wnt Signaling Inhibition via Lentiviral-Encoded Beta-Catenin Short Hairpin RNA, *Tissue Engineering Part A* (2018). DOI: 10.1089/ten.tea.2017.0465