New material could improve bone grafting

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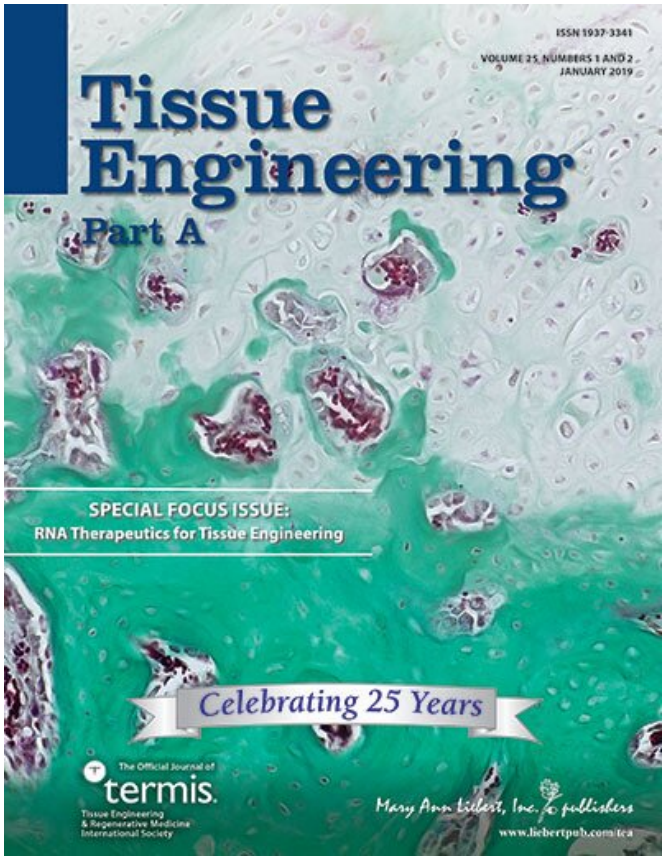

Credit: Mary Ann Liebert, Inc., publishers

For complex injuries and other situations requiring bone grafts, the best available technique involves autologous bone harvesting and re-implantation at the site of regrowth. However, because this process is invasive and limited by a finite supply of suitable donor material, synthetic graft-extending material is desired. In a new article published in *Tissue Engineering*, a peer-reviewed journal from Mary Ann Liebert, Inc., publishers, researchers report the first use of poly(thioketal urethane) (PTKUR) as an autologous graft extender in the technically demanding intertransverse process regeneration rabbit model.

Scott Guelcher, Ph.D., from the Departments of Biomedical Engineering and Chemical and Biomolecular Engineering, Vanderbilt, Nashville, TN, working in concert with colleagues from Vanderbilt and the U.S. Army Institute of Surgical Research, Houston, TX, present their work in an article titled ("Poly(Thioketal Urethane) Autograft Extenders in an Intertransverse Process Model of Bone Formation". The research team shows that PTKUR provides strength comparable to bone with handling properties similar to bone cements. Most importantly, PTKUR enabled an ~50% reduction of autograft material without significantly compromising bone healing in this challenging model.

"This paper presents a valuable new biomaterial-based autograft extender that can be used to treat critical-sized bone defects that may not heal with bone cements or void fillers alone," 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. "Such an advancement may have dramatic positive effects on current treatments to support bone healing."

More information: Madison A.P. McGough et al, Poly(Thioketal Urethane) Autograft Extenders in an Intertransverse Process Model of Bone Formation, *Tissue Engineering Part A* (2018). DOI: 10.1089/ten.tea.2018.0223

Provided by Mary Ann Liebert, Inc