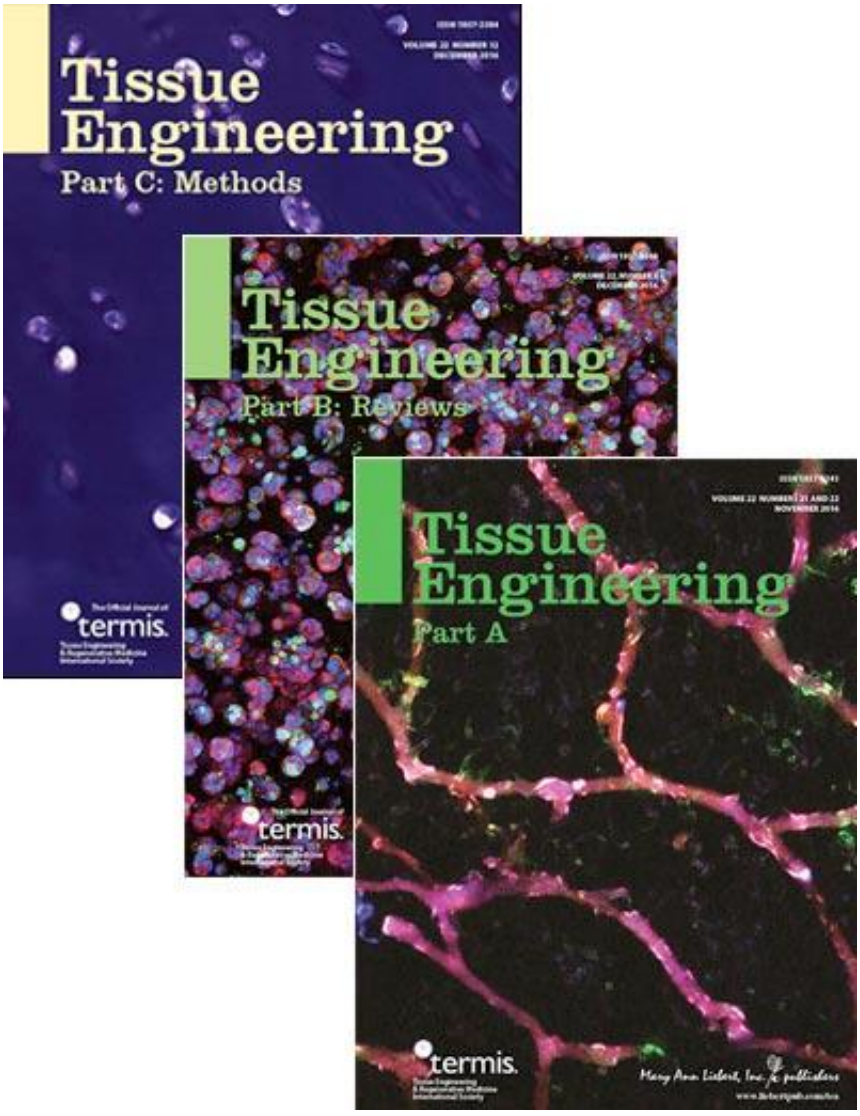
Promising results using silver-releasing scaffolds in MRSA infection of bone

January 4 2017



Tissue Engineering is the preeminent, biomedical journal advancing the field with cutting-edge research and applications on all aspects of tissue growth and regeneration. Credit: Mary Ann Liebert, Inc., publishers

Researchers developed a biocompatible scaffold capable of controlled-release of silver ions and have shown in a new study that it can inhibit infection of bone by methicillin-resistant Staphylococcus aureus, known as MRSA. The antimicrobial properties of silver combined with a biodegradable scaffold that can be seeded with bone-forming stem cells offers a potential implant system for treating and preventing bone infection, as described in an article published in *Tissue Engineering*, Part A.

Mahsa Mohiti-Asli, PhD and coauthors from University of North Carolina at Chapel Hill, North Carolina State University (Raleigh), Silpakorn University (Nakornpathom, Thailand), and University of Missouri (Columbia), present an experiment in which they seeded bone-forming stem cells on three-dimensional scaffolds either with or without MRSA. The researchers assessed bacterial biofilm formation to determine the effect of silver ions on bone infection (osteomyelitis). They report their findings in the article entitled "Evaluation of Silver Ion-Releasing Scaffolds in a 3D Coculture System of MRSA and Human Adipose-Derived Stem Cells for Their Potential Use in Treatment or Prevention of Osteomyelitis."

"Hybrid therapeutic approaches such as this combination of a regenerative and anti-infective platform are transforming our attack on complex musculoskeletal diseases," says Co-Editor-in-Chief Peter C. Johnson, MD, Principal, MedSurgPI, LLC and President and CEO, Scintellix, LLC, Raleigh, NC.

Research reported in this publication was supported by the Clinical and Translational Science Awards (CTSA) program of the National Institutes of Health under grant numbers 550KR71418 and 550KR61325, and the National Institute of Biomedical Imaging and Bioengineering under grant

number 1R03EB008790. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

More information: Mahsa Mohiti-Asli et al. Evaluation of Silver Ion-Releasing Scaffolds in a 3D Coculture System of MRSA and Human Adipose-Derived Stem Cells for Their Potential Use in Treatment or Prevention of Osteomyelitis, *Tissue Engineering Part A* (2016). DOI: 10.1089/ten.tea.2016.0063

Provided by Mary Ann Liebert, Inc