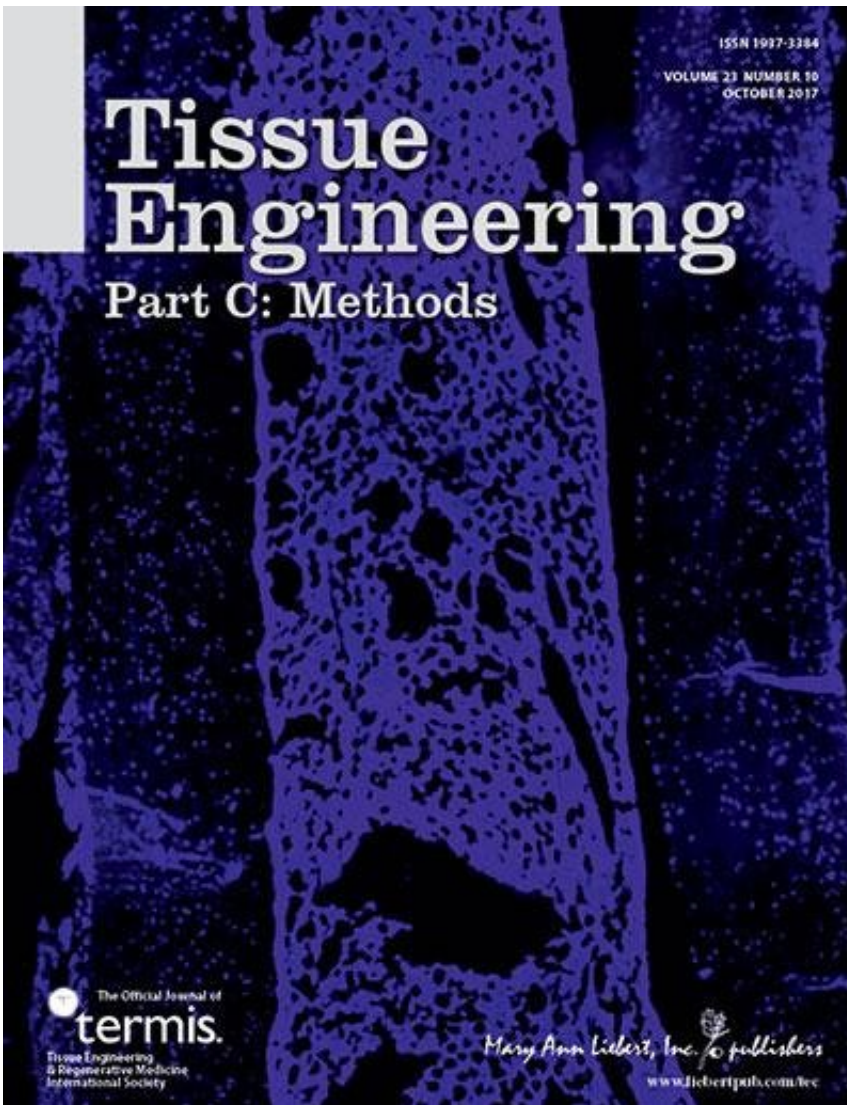


Animal models in regenerative medicine in upcoming special issue of tissue engineering

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Tissue Engineering Part C brings together scientific and medical experts in the fields of biomedical engineering, material science, molecular and cellular biology, and genetic engineering. Credit: Mary Ann Liebert, Inc., publishers

Novel approaches to tissue engineering and regenerative medicine are first evaluated and optimized in animal models before making the leap to clinical testing in human subjects. For many of these innovative new techniques and materials to succeed and advance to the clinic, the selection of an appropriate animal model and design of the experiments to gauge performance and outcomes can determine whether a particular approach, and the field in general, continue to move forward. A special issue devoted to the latest research on using animal models in regenerative medicine research is forthcoming in *Tissue Engineering, Part C*, a peer-reviewed journal from Mary Ann Liebert, Inc., publishers. Select articles from the issue are now available online on the *Tissue Engineering* website.

Guest Editors Jorge Piedrahita, PhD, North Carolina State University College of Veterinary Medicine, Raleigh, and J. Koucky Williams, DVM, Wake Forest School of Medicine, Winston Salem, NC oversaw the development of the special issue. They compiled a series of outstanding papers on diverse topics contributed by leading researchers. These include the article entitled "Inflammation-Induced Osteogenesis in a Rabbit Tibia Model," in which F. Cumhur Öner, MD, PhD, et al., University Medical Center Utrecht, Delft University of Technology, and Utrecht University, The Netherlands, examined the inflammatory responses to bacterial infection that can promote bone formation. The researchers showed that the inflammatory response caused by exposure to *Staphylococcus aureus* antigens, in the absence of bacterial infection, could stimulate bone growth and might be a useful strategy in bone [regenerative medicine](#).

In the article "Rise of the Pigs: Utilization of the Porcine Model to Study Musculoskeletal Biomechanics and Tissue Engineering During Skeletal Growth," Matthew Fisher, PhD and coauthors from North Carolina State

University, University of North Carolina at Chapel Hill and UNC School of Medicine, present the unique opportunities and challenges for using pigs as translational models in the development of musculoskeletal regenerative [medicine](#) approaches. In particular, the researchers describe the advantages porcine models offer for studying biomechanics.

Johan Lammens, MD, PhD and coauthors from University Hospitals KU Leuven, KU Leuven, Medanex Clinic (Diest), and University of Liège, Belgium, caution that techniques for repairing large bone defects developed in the laboratory will only ultimately be successful in humans if the preclinical studies are performed in a reliable [animal model](#) using a bone defect of sufficient size created by following well-defined methods. They share their perspectives in the article entitled "Warning About the Use of Critical-Size Defects for the Translational Study of Bone Repair: Analysis of a Sheep Tibial Model."

"This special issue emphasizes not only the need for appropriate animal models to increase our understanding and knowledge, but also for the final clinical application of regenerative medicine-based products," says Methods Co-Editor-in-Chief John A. Jansen, DDS, PhD, Professor and Head, Department of Biomaterials, Radboud University Medical Center, The Netherlands.

More information: Michiel Croes et al, Inflammation-Induced Osteogenesis in a Rabbit Tibia Model, *Tissue Engineering Part C: Methods* (2017). [DOI: 10.1089/ten.tec.2017.0151](https://doi.org/10.1089/ten.tec.2017.0151)

Provided by Mary Ann Liebert, Inc

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