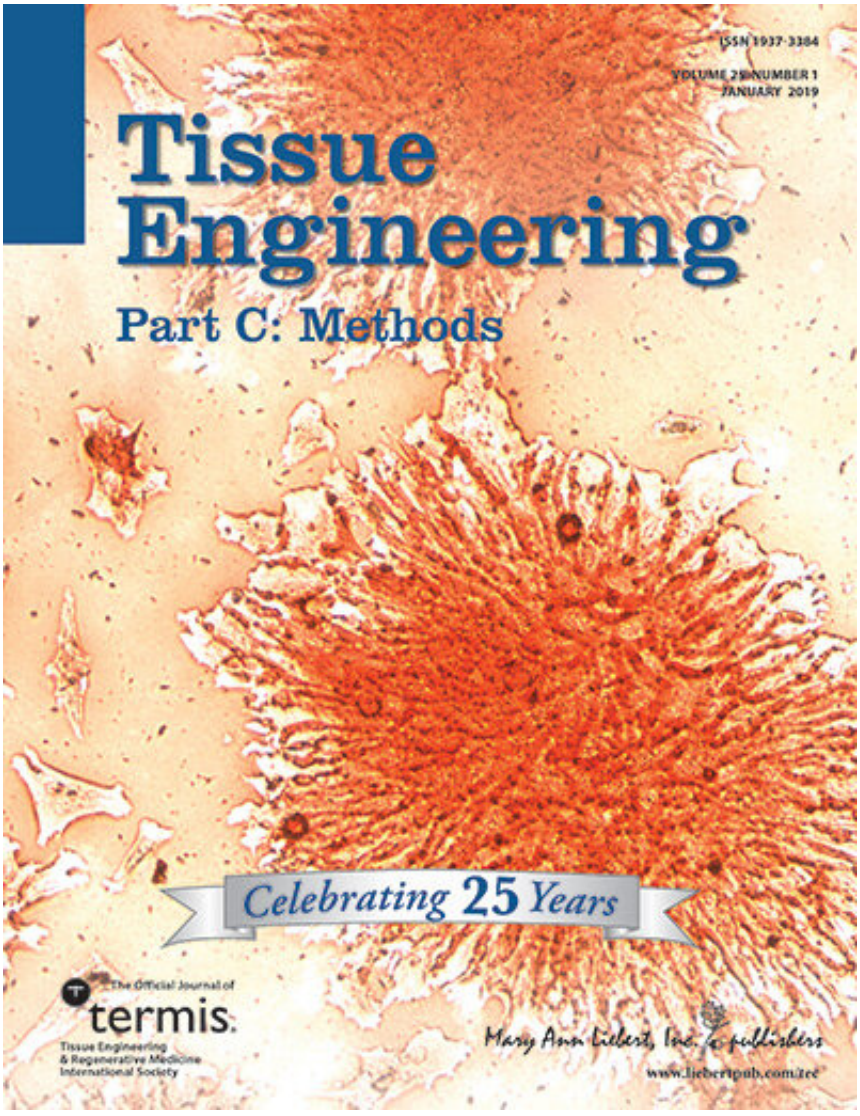
Multichannel bioreactor for lung regeneration analysis

January 28 2019



Credit: Mary Ann Liebert, Inc., publishers

New strides are being made toward the ex vivo growth of human lungs. In a new article published in *Tissue Engineering*, a peer-reviewed journal from Mary Ann Liebert, Inc., publishers, researchers report the development of a high-throughput, automated, multichannel lung bioreactor that allows parallel culture of up to five human cell-populated isolated rat lung scaffolds.

Harald C. Ott and colleagues from Harvard Medical School and Massachusetts General Hospital, Boston, MA, present their work in an article titled "A Fully Automated High-Throughput Bioreactor System for Lung Regeneration". With their multichannel bioreactor, the authors show that a multiphase biomimetic culture method yields consistent tissue regeneration at several time points across samples. Flow, pressure, and ventilation parameters can be reproducibly regulated, thus reducing variability and allowing more precise study of ex vivo lung regeneration. Non-invasive analysis methods can also be used to direct real-time condition adjustment and improve lung regeneration.

"Developments in bioreactor technology are crucial to the advancement of the tissue engineering field, especially in the growth of complex tissues," says *Tissue Engineering* Co-Editor-in-Chief Antonios G. Mikos, Ph.D., Louis Calder Professor at Rice University, Houston, TX. "The bioreactor system demonstrated in this paper is an elegant system to not only support ex vivo lung growth, but also represents a powerful tool to enable future research with engineered lung tissues."

More information: Daniel E. Gorman et al, A Fully Automated High-Throughput Bioreactor System for Lung Regeneration, *Tissue Engineering Part C: Methods* (2018). DOI: 10.1089/ten.tec.2018.0259

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