Biofabrication of 3D models for the study of lung diseases

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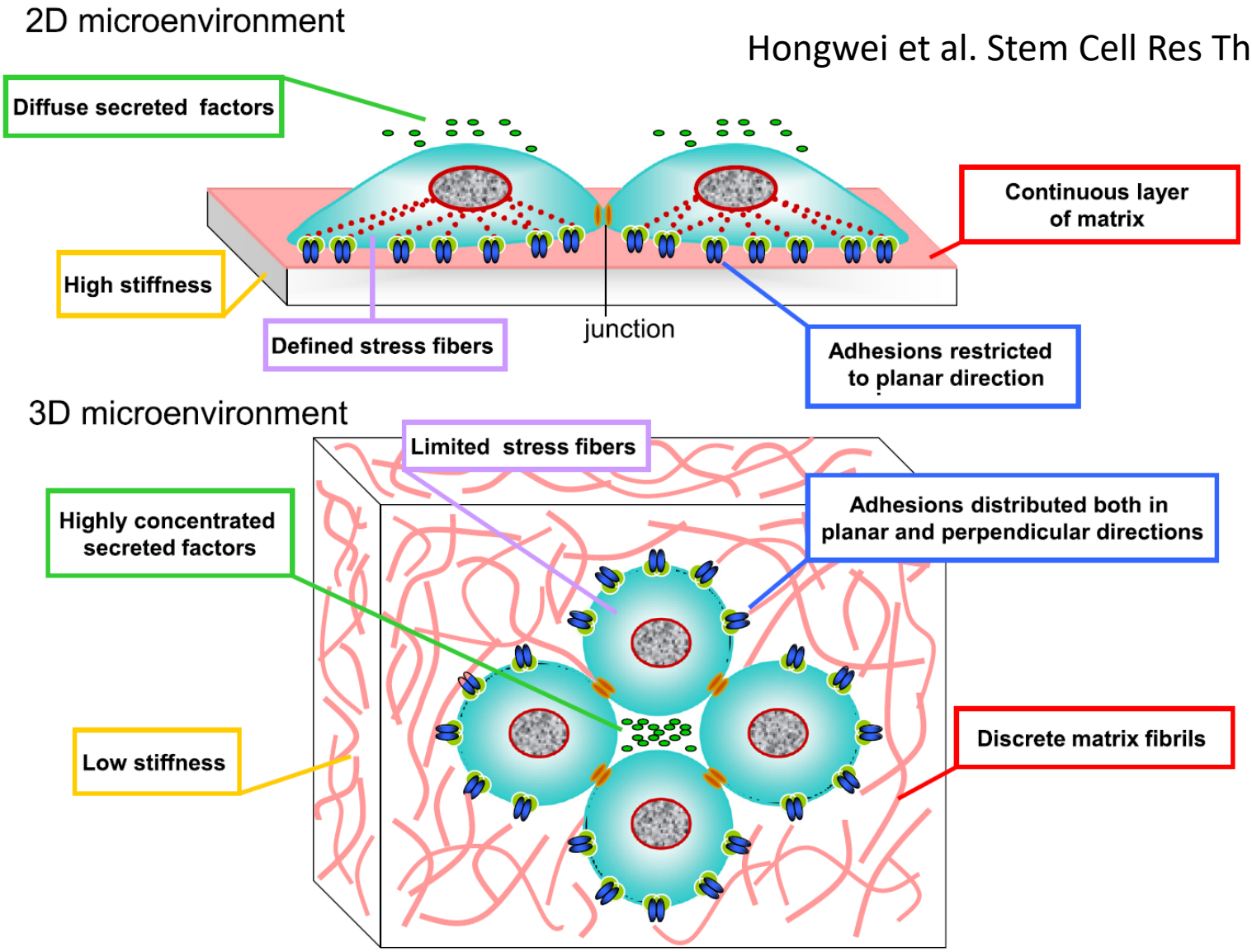
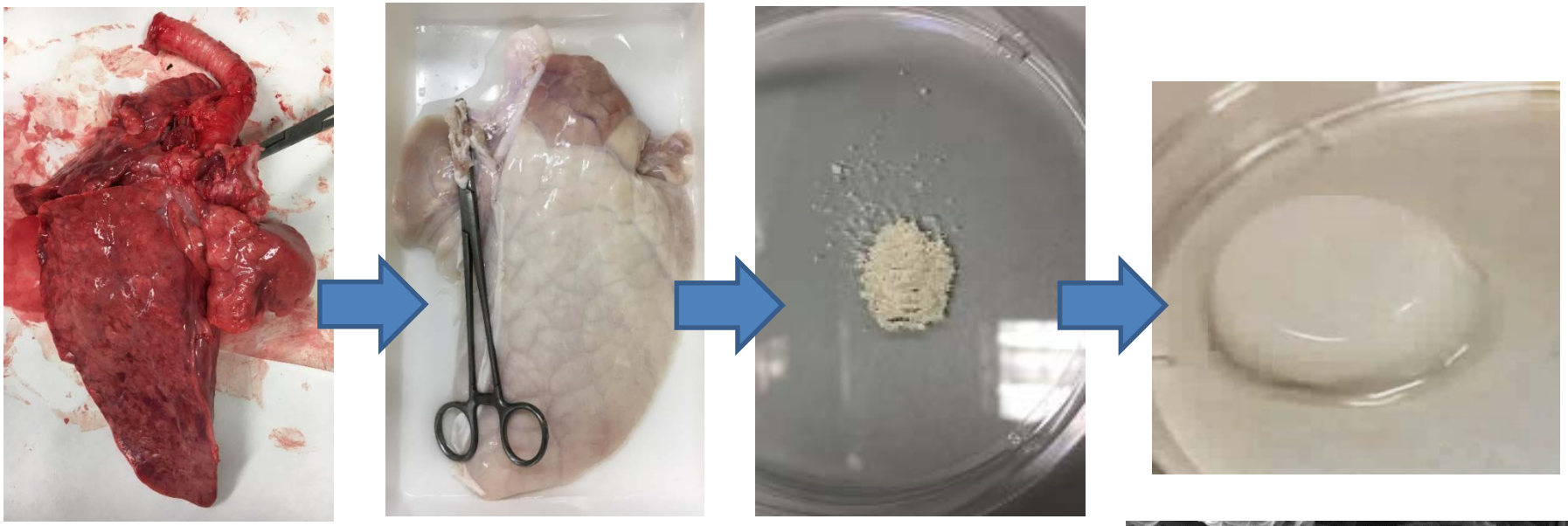
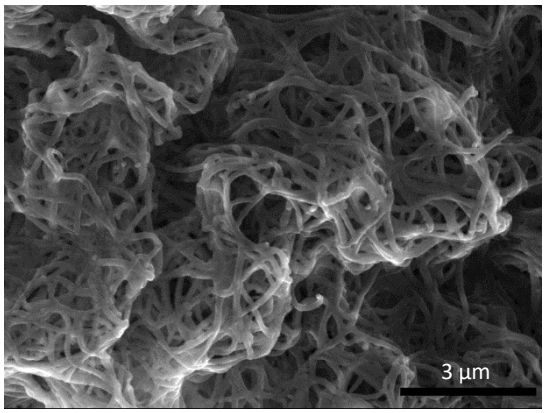
3D cell culture

Hongwei et al. Stem Cell Res Ther. 2015

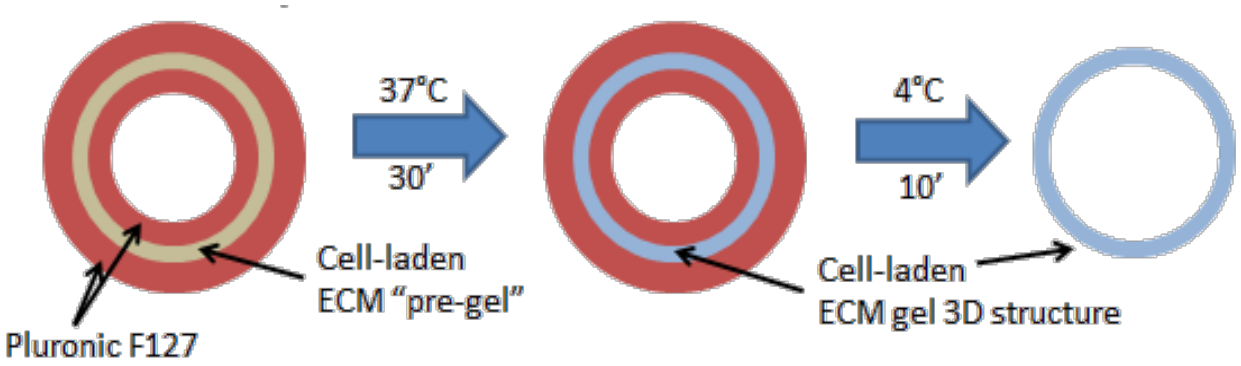


Decellularized lung hydrogels

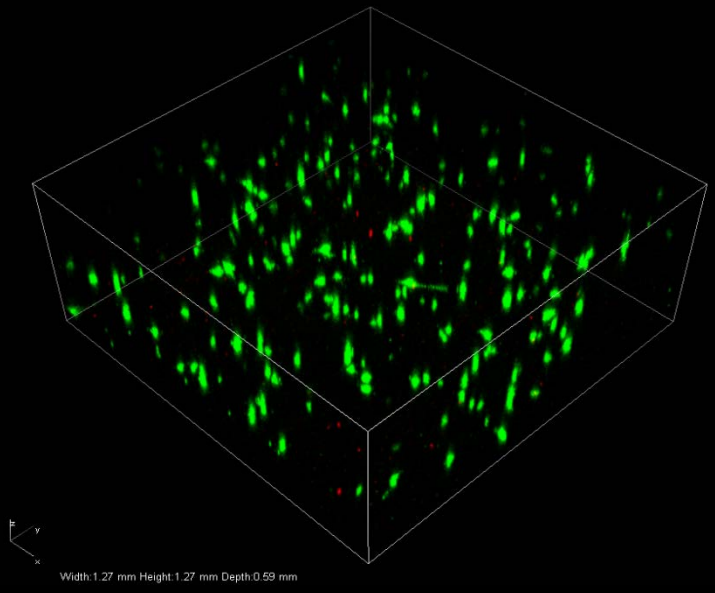


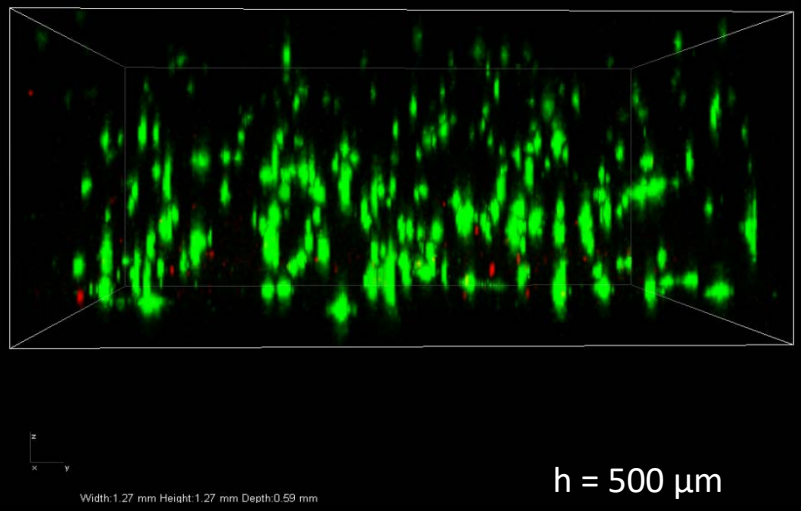


3D Bioprinting



3D L-MSCs cultures



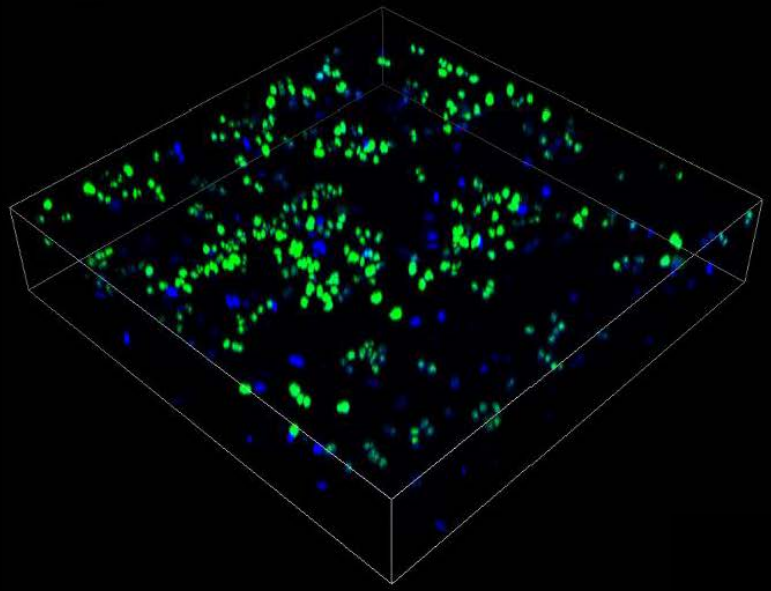


DNA **Esterases**

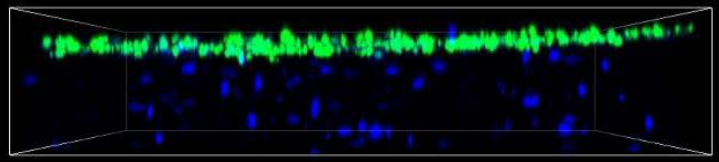
h = 500 µm
t = 7 days

3D ALI model

A

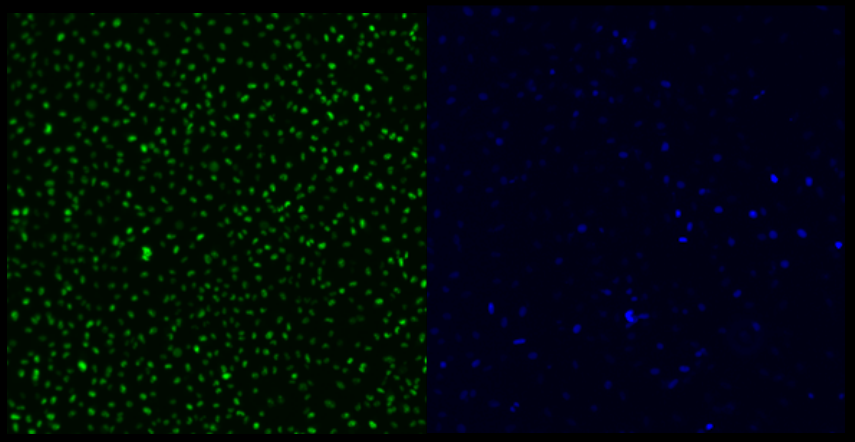


B



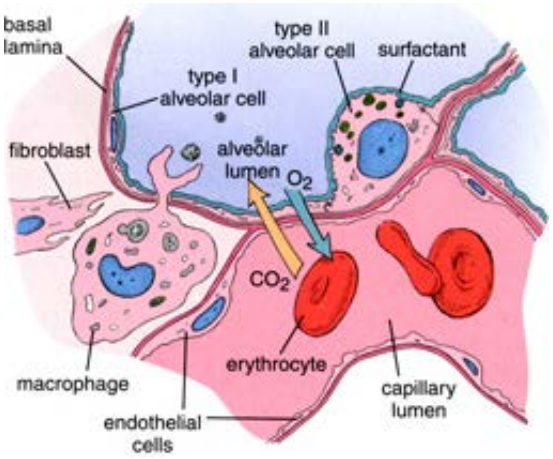
A549 cells

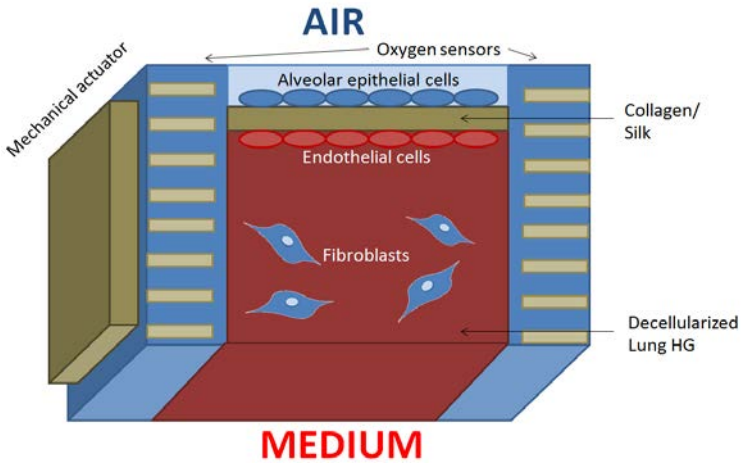
L-MSCs



Technologies

- ECM, type I collagen and silk-fibroin hydrogels
- 3D bioprinting
- Nanocomposite naturally-derived hydrogels (CNTs, NPs)
- Micro and macromechanical mechanical properties measurement
- SEM imaging of cell-laden hydrogel structures
- Live imaging of 3D cell cultures
- Immunohistochemistry of 3D cell cultures





High-Yield fabrication of Biomechatronic hydrogel devices for Respiratory Injury and Disease modelling (HYBRID). PGC2018-097323-A-I00

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