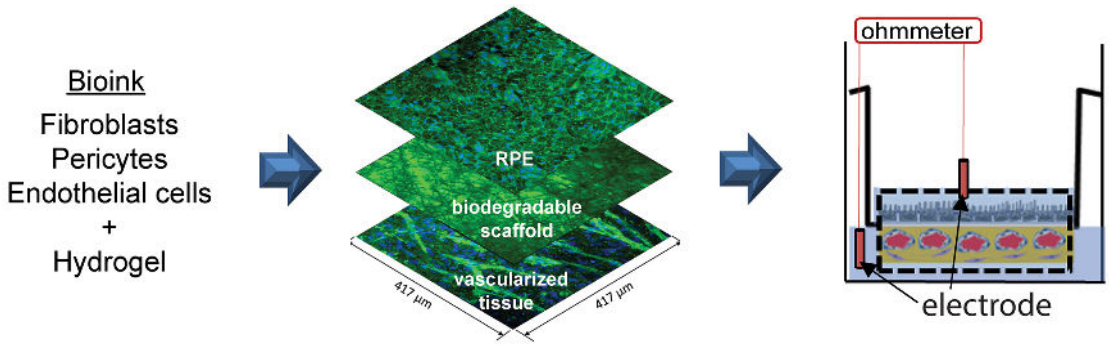
Bioprinted Retinal Tissue for Zika Disease Modeling

Dorjsuren D, Eastman RT, Song MJ, Yasgar A, Chen Y, Bharti K, Zakharov AV, Jadhav A, Ferrer M, Shi PY, Simeonov A. A platform of assays for the discovery of anti-Zika small-molecules with activity in a 3D-bioprinted outer-blood-retina model. PLOS ONE 17(1): e0261821.

Overview

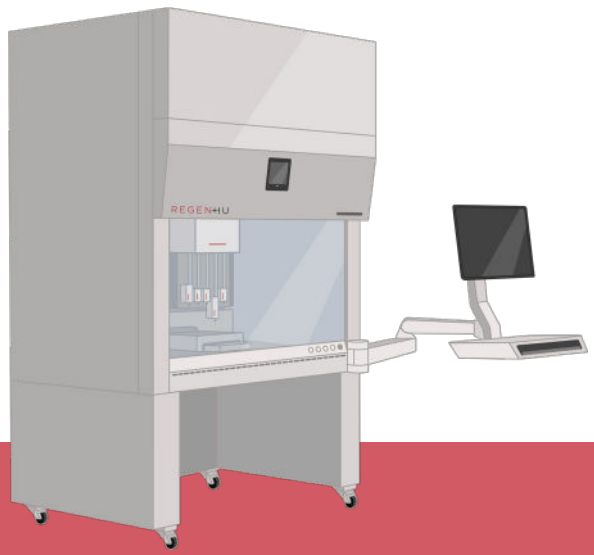
Despite the significant efforts invested in the development of therapeutical interventions, there are still no vaccines or approved antivirals to prevent or treat the Zika virus.

In this study, a 3D-bioprinted outer-blood-retina barrier model was developed and infected with the virus. This model was used to validate screening results on compounds that inhibit Zika virus disease and its transmission.



Results

- Pathological effects accurately represented in the bioprinted model (vs. classical model)
- Ability to correct viral-induced effects in the bioprinted model (vs. classical model)



REGENHU's bioprinting technology enables:

Pathology expression
70% loss of barrier function vs. 25% for monoculture

Automated approach
Process performed directly in 6- and 24-well plates

Interested to know more ?

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