Primary cell culture

- Patient-Derived Glioblastoma Explants Empower Rapid and Personalized Drug Assessment: Harnessing the Potential of 3D Perfusion Bioreactors in Glioblastoma Drug Discovery
- Primary culture of inner ear schwannoma
- Phosphodiesterase 4 regulates pyroptosis in subarachnoid hemorrhage
- Targeting COL5A1 enhances anoikis thus attenuating malignancy of glioblastoma via inhibiting the Wnt/β-catenin signaling pathway
- Delayed peripheral nerve rehabilitation in aquaporin-3 deficiency in mouse models of sciatic nerve contusion
- A Comparison Between Proximal and Distal Cerebrospinal Fluid Sampling Sites in Patients With External Ventricular Drains
- Establishment of a patient-derived 3D in vitro meningioma model in xeno-free hydrogel for clinical applications
- Comparison of utilization rate and graft outcomes of corneas from cadaveric donors (CDs) versus multiorgan donors (MDs)

A high-density 3D primary cell culture model for short-term testing from resected glioblastoma tissue that is set up on the day of surgery, established within 7 days, and viable for at least 3 weeks. High-density 3D cultures contain tumor and host cells, including microglia, and retain key histopathological characteristics of their parent tumors, including proliferative activity, expression of the marker GFAP, and presence of giant cells. This provides proof of concept that 3D primary cultures may be useful to model tumor heterogeneity. High-density 3D cultures can be used to test chemotherapy response within a 2-3-week timeframe and are predictive of patient response to Temozolomide therapy. Thus, primary high-density 3D cultures could be a useful tool for brain cancer research and the prediction of therapeutic resistance [1)]

1)

J B, M Z, C O, F S, R S, H B, Fa S, Wp G. A high-density 3-dimensional culture model of human glioblastoma for rapid screening of therapeutic resistance. Biochem Pharmacol. 2023 Jan 9:115410. doi: 10.1016/j.bcp.2023.115410. Epub ahead of print. PMID: 36632958.