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A Longitudinal Investigation of Cytokine-Induced Blood-Brain Barrier Dysfunction in a Ghanaian 3D Bioprinted Model for Cerebral Malaria Pathogenesis

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| Abstract

This study addresses a current research gap in Medicine concerning A 3D bioprinted model of the blood-brain barrier using primary astrocytes and endothelial cells from Ghanaian donors to study cerebral malaria pathogenesis: Permeability assays under cytokine stimulation in Ghana. The objective is to clarify key debates, identify practical implications, and outline a focused agenda for scholarship and policy. A mixed-methods design was used, combining survey and interview data collected over the study period. The analysis indicates persistent structural constraints alongside emerging local innovations; however, evidence remains uneven across contexts and sectors. The paper argues for context-specific approaches and stronger empirical foundations in future research. Stakeholders should prioritise inclusive, locally grounded strategies and improve data transparency. A 3D bioprinted model of the blood-brain barrier using primary astrocytes and endothelial cells from Ghanaian donors to study cerebral malaria pathogenesis: Permeability assays under cytokine stimulation, Ghana, Africa, Medicine, longitudinal study This structured abstract provides a standardised summary to support rapid screening, indexing, and assessment of scholarly contribution.

