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(54) Title: THREE-DIMENSIONAL BIOREACTOR FOR VIRAL VECTOR PRODUCTION

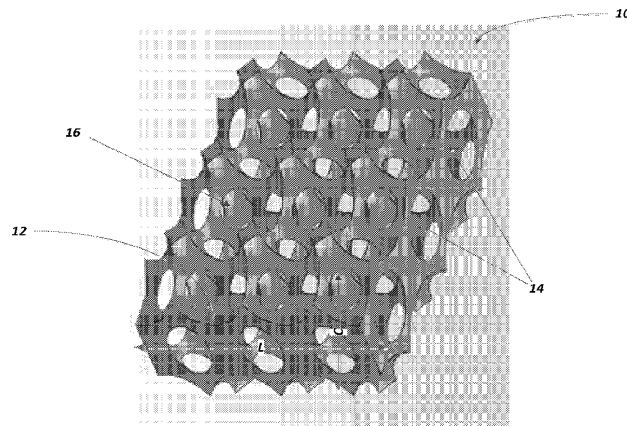


FIG. 1

(57) Abstract: The present disclosure relates to the design, fabrication, and applications of a three-dimensional (3D) bioreactor for expansion of viral vector producing cells and ultimate harvesting of viral vectors. The bioreactor is composed of non-random interconnected voids providing a continuous three-dimensional surface area for cell adherence and growth. The 3D bioreactor is also scalable with a defined geometry, surface coating, and fluidic dynamics to maintain a monolayer cell culture and reduce or prevent cell aggregation, phenotype change, or extracellular production, and is particularly suitable for culturing of HEK 293T cells providing lentiviral vectors under appropriate surface coating of the bioreactor. The invention can also extend to produce other types of viruses and vaccines based on live-attenuated viruses, or inactivated viruses, or viral vectors.

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