

Sequential Adaptation to Serum-Free Medium for Vero Cells Cultivation on Ultraviolet/Ozone (UVO) Treated Microcarrier

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Abstract

Vero cells are continuous mammalian cell lines that are commonly used in research, viral vaccines production, recombinant protein production, and many others. The main objective of this study was to adapt the Vero cells in serum-free medium (SFM) from serum supplemented medium (SSM) prior to culture upscale from T-flask to spinner vessel using ultraviolet/ozone (UVO) treated polystyrene (PS) and polycaprolactone (PCL) microcarriers. The number of cells was counted using hemocytometer and microscope. From the results, it was observed that the maximum cell concentration of SFM adapted cells is higher than the cells cultured in SSM along with shorter doubling time. Culture of Vero cells in spinner vessel showed lower maximum cell concentrations compared to in T-flask due to several factors such as cell inoculum size, hydrophilicity of microcarriers and elevated temperature during incubation.

Keywords: Vero cell; Serum-free medium; Polystyrene microcarrier; Polycaprolactone microcarrier.