

## Platform Development for Vero Cell Culture on Microcarriers Using Dissociation-Reassociation Method

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**Abstract :** Vero cell is a continuous cell line that is widely used for the production of viral vaccines. However, due to its adherent characteristic, scaling up strategy in large-scale production remains complicated and thus limited. Consequently, suspension-like Vero cell culture processes based on microcarriers have been introduced and employed while also providing increased surface area per volume unit. However, harvesting Vero cells from microcarriers is a huge challenge due to difficulties in cells detaching, lower recovery yield, time-consuming and dissociation agent carry-over. To overcome these problems, we developed a dissociation-association platform technology for detaching and re-attaching cells during subculturing from microcarriers to microcarriers, which will be conveniently applied to seed trains strategies in large scale bioreactors. Herein, Hillex-2 was used to culture Vero cells in serum-containing media using spinner flasks as a scale-down model. The overall confluency of cells on microcarriers was observed using inverted microscope, and the sample cells were daily detached in order to obtain the kinetics data. The metabolites consumption and by-products formation were determined by Nova Biomedical BioprofileFlex.

**Keywords :** dissociation-reassociation, microcarrier, scale up, Vero cell

**Conference Title :** ICBEB 2018 : International Conference on Bioprocess Engineering in Biotechnology

**Conference Location :** Singapore, Singapore

**Conference Dates :** September 10-11, 2018