SARTORIUS

Simplifying Progress

Lentiviral Vector Workflow Lab Solutions

1

LV Production Process

Producer cells with extracellular LV

Cultivation of HEK293 Cells

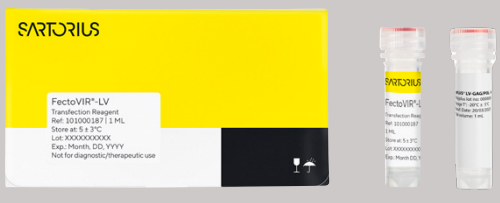
Our high performing HEK media are designed to best fit with the high variability of HEK293 cell lines and complexity of viral vector processes.

Visit eShop

Transfection

FectoVIR®-LV is the next generation of transfection reagent, free of animal components, designed to improve LV productivity in HEK-293 cells. pPLUS® LV includes a set of packaging plasmids (REV, GAG/POL and VSV-G) designed with the e-Zyvec® assembly technology for Lentivirus production.

Visit eShop



Small to Large Scale Cell Culture Optimization

The micro-scale bioreactor system Ambr® 15 mimics the features and processes of large-scale bioreactors

Visit eShop

2

Nucleic Acid Disgestion & Clarification

LV in Filtrate

Clarification

Sartolab® is a vacuum-driven bottle top filter line, designed for efficient and reliable clarification of aqueous solutions in laboratory applications, and can be used without (A) or with (B) the filter aid diatomaceous earth (DE); additionally, the Multistation offers multiparallel filtration capabilities.

Recommendation of use:

A) Sartolab® (0.45 µm pore size) for adherent cell culture supernatant

B) Sartoclear Dynamics® Lab (0.45 µm pore size) and DE for suspension cell culture broth (containing cells)

- Robust & fast filtration
- 75-100% infectious LV recovery

Learn More: DE Usage Guidelines

Application Note: Infectious LV Recovery

Videos and information on Cell Harvesting Solutions

3

(Optional) UF/DF Concentration & Buffer Adjustment LV in filtrate

Buffer Adjusted / Concentrated LV

Ultrafiltration and Diafiltration

Vivaflow® cassettes are high-performance, crossflow filtration devices from Sartorius, used for efficient concentration and formulation of proteins, viruses, and other biomolecules in laboratory applications

Recommended product for LV application:
Vivaflow® PES 100 kDa

- 81% and 42% recovery during diafiltration and concentration step, respectively

Application Note: Diafiltration and Ultrafiltration with Vivaflow® SU

Video: Vivaflow SU Tutorial: Rapid Macromolecule Concentration

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Purification

Purified LV

Chromatographic Purification Using Sartobind® Convec D

Sartobind® Convec D is an anion exchange membrane adsorber specifically designed for the efficient purification and separation of large biomolecules such as lentiviral vectors, utilizing convective flow to enhance binding capacity and speed.

- 68% infectious LV recovery, removal of protein and nucleic acid impurities

Application Note: Enhanced Anion-Exchange Capture Chromatography of Lentiviral Vectors Using Sartobind® Convec D

Video: Sartobind® Lab Tutorial: Equipment-Free Purification w/Syringes

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UF|DF – Concentration & Formulation

Purified LV in Right Buffer & Concentration

Ultrafiltration and diafiltration for final concentration and formulation

Vivaspin® concentrators are centrifugal ultrafiltration devices used for the rapid and efficient concentration of biological samples in laboratory settings. They are ideal for applications requiring sample volume reduction and buffer exchange with minimal sample loss.

- 60-65% infectious LV recovery at 500 x g after 7.5x concentration

Recommended products:

- Vivapsin® Turbo PES
- Vivaspin® Turbo RC
- Vivaspin® 20 PES

Application Note: Improving the Efficiency of Lentiviral Concentration

Video: Discontinuous Diafiltration w/ Vivaspin® Centrifugal Ultrafilters

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Sterile Filtration

Sterile LV

Syringe filter Minisart®

Minisart® syringe filters provide efficient and reliable removal of particulates and microorganisms from liquids in laboratory and research applications to ensure sample sterility prior to analysis or use.

Minisart® 0.22 µm PES

Video: Sterile Filtration w/Minisart® Syringe Filters

7

Analytical Tools

Infectious LV titer measurement using the iQue® flow cytometer or the Incucyte® live-cell imaging system

Application Note: Real-Time Live-Cell Analysis of Lentiviral Titer Determination

Learn more at:
www.sartorius.com