SARTORIUS

Simplifying Progress

Adeno Associated Vector Workflow Lab Solutions

1

AAV Production Process

Producer cells with intracellular AAV

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®-AAV is a novel generation of synthetic transfection reagent specifically developed for industrial scale production of recombinant AAV (rAAV) in both suspension and adherent HEK-293 derivative cell systems.

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

Lysis and Clarification

AAV 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 with the filter aid diatomaceous earth (DE); additionally, the Multistation offers multiparallel filtration capabilities.

- Robust & fast filtration
- 95% infectious AAV recovery

Recommended Product:

Sartoclear Dynamics® Lab (0.2 µm pore size) and DE for suspension cell culture broth (containing cells)

Application Note: Centrifuge-Free Clarification and Harvest of AAVs

Learn More: DE Usage Guidelines

Video and Information on Cell Harvesting Solutions

3

Purification | Capture

Purified AAV (Full & Empty)

Volume Reduction | Capture Using Ultrafiltration & Chromatography

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. They are ideally suited for the efficient concentration and buffer exchange of AAV harvests prior to the capture step.

Recommended Product:

Vivaflow® PES 100kDa

- 100% genome & capsid recovery

Application Note: Lab-Scale Concentration of a Clarified AAV8 Lysate by Tangential Flow Filtration

Video: Vivaflow® Tutorial: Rapid Macromolecule Concentration

Purification using Sartobind® S | CIMmultus® SO3

- Robust and Scalable Purification of AAV

Application Note: Robust and Scalable Membrane Chromotography for AAV Capture Using Sartobind® S

Application Note: Robust and Scalable AAV8 Purification: A Two-Step Monolithic Chromatography Process

4

Polishing

Purified AAV (Full)

Polishing

After capture, the product contains a mix of full, partially full, and empty AAV particles. Sartobind® Q and PrimaT™ are ideal for enriching full AAV capsids.

Recommended Product:

Sartobind® Q | CIMmultus® PrimaT™

- Robust and Scalable enrichment of full AAV

Application Note: Establishing a Small Scale AAV Empty/ Full Separation Process Using Sartobind® Q Lab

Application Note: AAV Full Capsids Enrichment with CIMmultus® QA

5

UF | DF Buffer Exchange

Purified AAV 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.

Recommended product:

Vivaspin® Turbo PES 50 kDa

Application Note: Using Centrifugal Ultrafiltration to Efficiently Concentrate AAV8

Video: Discontinuous Diafiltration with Vivaspin® Centrifugal Ultrafilters

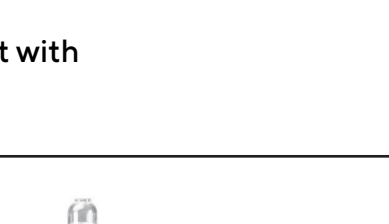
6

Sterile Filtration

Sterile AAV

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.



Recommended product:
Minisart® 0.22 µm PES

Application Note: Sterile Filtration of Small AAV Solutions

Video: Sterile Filtration with Minisart® Syringe Filters

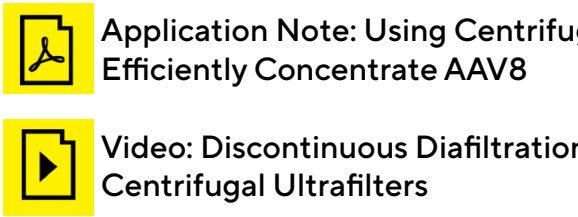
7

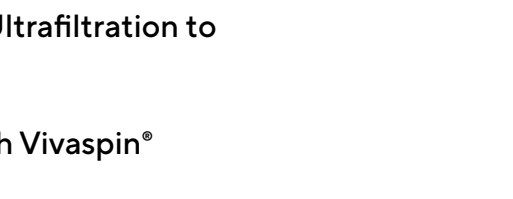
Analytical Tools

Infectious AAV titer measurement using the iQue® flow cytometer or the Incucyte® live-cell imaging system. Particle titer determination using Octet® BLI with Octet® AAVX Biosensors

Application Note: Octet® AAVX Biosensors for Rapid and Direct Quantitation of AAV Capsids

Paper: Unveiling the secrets of adeno-associated virus: novel high-throughput approaches for the quantification of multiple serotypes





Learn more at:
www.sartorius.com