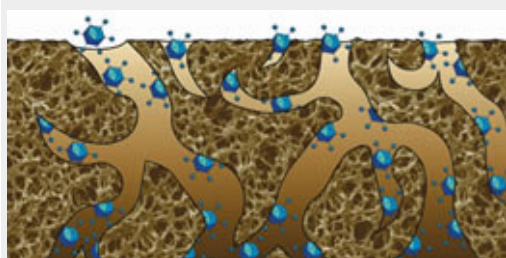


Vivapure AdenoPACK 20

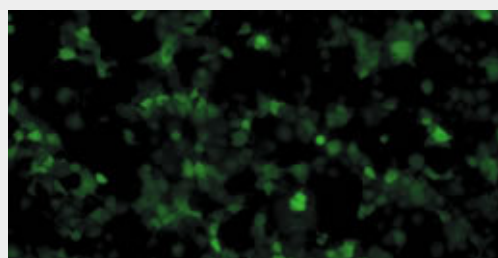
The optimal kit for construct screening

Vivapure AdenoPACK 20 is the small scale kit in the AdenoPACK series, purifying up to 1×10^{12} viral particles from 20 ml cell culture. Especially when testing new constructs, parallel and fast purifications of different adenoviruses are essential. This kit allows the rapid, simple and affordable spin column based purification of 6 different samples in parallel and bridges a gap in the CsCl density gradient method – for the first time adenovirus can efficiently be purified from less than 100 ml cell culture volume!



Membrane adsorber technology:

Membrane adsorbers are ideal for virus purification. Large flow through pores allow unrestricted adenovirus access and convective transport speeds purification.



Fluorescent cell assay

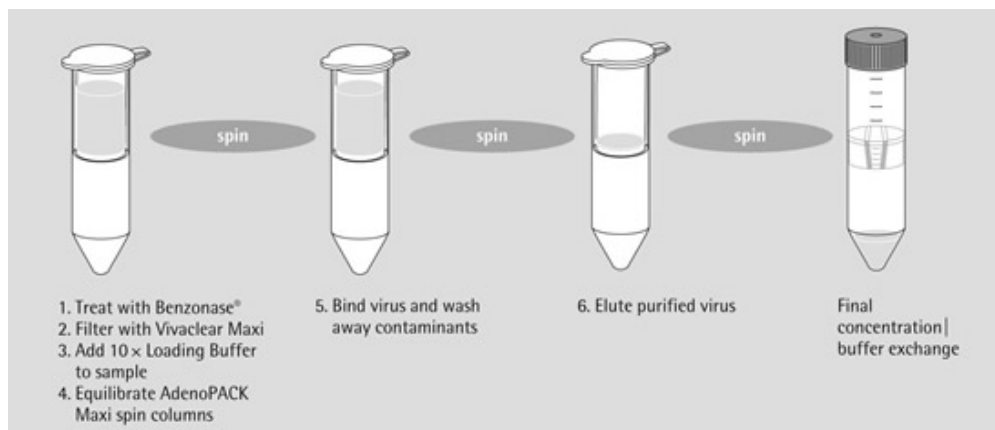
Photography: kindly provided by Dr. Lux, University Hospital and University of Applied Sciences, Mannheim. COS-1 cells infected with Ad5 GFP-constructs after purification and concentration with Vivapure AdenoPACK 20.

Membrane adsorber technology:

AdenoPACK encompasses the advantages of open structures of membranes with the benefits of classical chromatography. Our membrane adsorbers with porous matrices, high capacities, low differential pressures, high flow rates and low unspecific adsorption show an excellent performance in small scale virus purification. However, they are also scalable and confirm to cGMP facilities to large volume, high performance separation, reducing the processing time by a factor of 10 in the final process.

AdenoPACK 20 Adenovirus purification and concentration kit features and benefits

Feature	Benefit
Spin column based kit	» Easy and fast parallel purification of multiple samples
Virus purification based on membrane adsorber technology	» High-speed process completed in about 1 hour » Excellent viral access provides quantitative recoveries
Kit contents include Vivaclear, AdenoPACK Maxi spin columns, Vivaspin and all buffers	» Convenient, easy to use alternative
Able to process 6 x 20 ml cell culture	» Flexible, most cost-effective kit in the market for purifying $6 \times 10^{11-12}$ viral particles.



Cultures should be grown in DMEM + 10% FBS pH 7.0 - 7.4 at 37°C with 5% CO₂

Kit Specifications

Sample Size	Up to 6 x 20 ml of Adenovirus supernatants
Recovered virus particles (VP)	Typically up to 1 x 10 ¹² per 20 ml preparation
VP/IU	20 - 50
Processing time	Typically 1 hour
Endotoxin level	< 0.025 EU/ml

Materials of construction

AdenoPACK spin column housing:	Polypropylene
AdenoPACK filter membrane	Stabilized regenerated cellulose
Vivaclear Maxi housing	Polypropylene
Vivaclear Maxi membrane 0.45 µm	PES
Vivaspin housing	Polycarbonate
Vivaspin membrane	PES
Buffer containers	LDPE

Ordering Information

Kit Contents and ordering information

AdenoPACK 20	VS-AVPQ020
AdenoPACK Maxi spin columns	6
Benzonase® Nuclease* 12.5 U/μl	120μl
Vivaclear Maxi membrane 0.45 μm	6
Empty 50 ml tubes	6
Loading Buffer (10x)	1 x 25 ml
Washing Buffer (10x)	1 x 30 ml
Elution Buffer	1 x 20 ml
Vivaspin 20 concentrator, 100 kDa MWCO	6
Instructions	1 each for Kit and Vivaspin

Purification results from preparations with Ad5 GFP-constructs

Product	Purification method	Process time	Eluate*	Recovery**	Viral Particles
AdenoPACK 20	20 ml culture	1 hour	1 ml	65-70%	1 x 10 ¹¹⁻¹²
AdenoPACK 100	60 ml culture	1-2 hours	1 ml	65%	1-3 x 10 ¹²
AdenoPACK 100	200 ml culture	2 hours	1 ml	80%	1 x 10 ¹³
AdenoPACK 500	500 ml culture	1-2 hours	1 ml	80%	1-3 x 10 ¹³
	500 ml CsCl	24-48 hours	1-2 ml	60-70%	1-5 x 10 ¹¹⁻¹²

*after dialysis **before buffer exchange



*Virus purification tests conducted in cooperation with Progen Biotechnik GmbH, Heidelberg.
Providing custom made vector development and production service for Adenovirus and Adeno-associated
Virus vector systems.*

* Benzonase® Nuclease is manufactured by Merck KGaA, Darmstadt, Germany and is covered by US Patent 5,173,418 and EP Patent 0,229,866. Nycomed Pharma A/S (Denmark) claims worldwide patent rights to Benzonase® Nuclease, which are licensed exclusively to Merck KGaA, Darmstadt, Germany. Benzonase® Nuclease is a registered trademark of Merck KGaA, Darmstadt, Germany.

Warning: The virus purified using this kit is capable of infecting human or animal cells and could, depending on the gene insert, expose the user to potentially hazardous biological material. Adenoviruses have been designated as Level 2 biological agents.

All protocols detailed in these operating instructions must be performed under at least Biosafety Level 2 working condition this kit is NOT intended for human or animal diagnostic or therapeutic applications.

