

# AVIPure® AAV Affinity Resin - Quick Start Guide

## Introduction

AVIPure® AAV affinity resins offer efficient purification of adeno-associated virus (AAV) serotypes AAV2, AAV8, and AAV9 with capacities from  $>2 \times 10^{14}$  vp/mL of resin at 1-minute residence time to  $>7 \times 10^{14}$  vp/mL of resin at 4-minute residence time.

## Process conditions

Optimal conditions for purification of AAV using AVIPure® AAV resins must be determined empirically for each AAV construct. Some general process development recommendations for initial trial conditions for **concentrated feed streams** are provided below.

Step	Column volumes	Residence time (min)	Suggested buffer
Sanitization	3 - 5	4 - 6	0.5 M NaOH
Equilibration	8	4	50 mM Tris, 400 mM NaCl, pH 7.5 Generally, can be matched to lysis buffer
Load	Titer dependent	4	-
Wash 1	5	4	Equilibration buffer
Wash 2 (if needed)	5	4	50 mM Tris, 50 mM octanoic acid, 0.5 M urea, pH 8.0
Wash 3	2	4	Equilibration buffer
Elution	5	4	50 mM glycine, 150 mM NaCl, pH 2; upflow elution may improve recovery. (Neutralize with 1 M Tris, pH 9)
Strip	2	4	Process specific (e.g., pH < 2)
CIP	5 or 1	6 or 30	0.5 M NaOH; total contact time should be 30 min
Re-equilibration	8	4	Equilibration buffer
Long term storage	3	3	2% benzyl alcohol or 18 - 20% ethanol at 8° C

The recommended protocol for **dilute feed streams** is the same as that shown above for concentrated feed streams, but residence times for equilibration, load washes, and re-equilibration steps may be reduced to match the residence time of the load, which can be as short as 1 minute but will depend on the column bed height. The agarose base bead enables use in typical bioprocess column diameters and bed heights (5 - 20 cm). For short residence times, use of a shorter bed height (e.g., 5 cm) is recommended.

## Elution conditions

AAV capsids can be eluted from the affinity resin with low pH buffers (e.g., pH 2.0 - 3.0). Due to the variability in tolerance of capsids to low pH across different AAV sub-serotypes, elution conditions must be determined experimentally. A low pH elution buffer of 50 mM glycine, 150 mM NaCl, pH 2.0 can be used as a recommended starting point. Presence of salt is essential for high elution yields. If elution at higher pH is desired, citrate or acetate buffer systems at pH 3.0–4.5 with the following additives are recommended:

- Arginine: up to 1 M
- MgCl<sub>2</sub>: up to 1 M (Wash out MgCl<sub>2</sub> prior to NaOH exposure to prevent precipitation)
- Propylene glycol: up to 70%

Combinations of additives can act synergistically for elution and should be evaluated for higher pH elution. Step elution can achieve high product concentrations; product typically elutes in two to three column volumes. Immediate pH neutralization of the elution buffer can help maintain product integrity.

Find complete operating guidance in the AVIPure® AAV Affinity Resin User Guide at [repligen.com](https://www.repligen.com).

## Ordering Information

Contact your sales representative or customer service for sales, or purchase online at <https://store.repligen.com/>

US: [customerserviceUS@repligen.com](mailto:customerserviceUS@repligen.com)

EU: [customerserviceEU@repligen.com](mailto:customerserviceEU@repligen.com)

China: [customerserviceCN@repligen.com](mailto:customerserviceCN@repligen.com)

## Product list

Product	Item number	Item description
AVIPure® AAV2 Affinity Resin	100AAV2-10	AVIPure® AAV2 Affinity Resin, 10 mL
	100AAV2-25	AVIPure® AAV2 Affinity Resin, 25 mL
	100AAV2-50	AVIPure® AAV2 Affinity Resin, 50 mL
	100AAV2-100	AVIPure® AAV2 Affinity Resin, 100 mL
	100AAV2-250	AVIPure® AAV2 Affinity Resin, 250 mL
	100AAV2-1000	AVIPure® AAV2 Affinity Resin, 1 L
	23051006	OPUS® MiniChrom® Pre-packed Column 5 x 50 mm, 1 mL, AVIPure® AAV2
	23051007	OPUS® MiniChrom® Pre-packed Column 11.3x50 mm, 5 mL, AVIPure® AAV2
	23051004-100	OPUS® MiniChrom® Pre-packed Column 8 x 100 mm, 5 mL, AVIPure® AAV2
AVIPure® AAV8 Affinity Resin	100AAV8-10	AVIPure® AAV8 Affinity Resin, 10 mL
	100AAV8-25	AVIPure® AAV8 Affinity Resin, 25 mL
	100AAV8-50	AVIPure® AAV8 Affinity Resin, 50 mL
	100AAV8-1000	AVIPure® AAV8 Affinity Resin, 100 mL
	100AAV8-250	AVIPure® AAV8 Affinity Resin, 250 mL
	100AAV8-1000	AVIPure® AAV8 Affinity Resin, 1 L
	23051106	OPUS® MiniChrom® Pre-packed Column 5 x 50 mm, 1 mL, AVIPure® AAV8
	23051107	OPUS® MiniChrom® Pre-packed Column, 11.3 x 50 mm, 5 mL, AVIPure® AAV8
	23051104-100	OPUS® MiniChrom® Pre-packed Column 8 x 100 mm, 5 mL, AVIPure® AAV8
AVIPure® AAV9 Affinity Resin	100AAV9-10	AVIPure® AAV9 Affinity Resin, 10 mL
	100AAV9-25	AVIPure® AAV9 Affinity Resin, 25 mL
	100AAV9-50	AVIPure® AAV9 Affinity Resin, 50 mL
	100AAV9-100	AVIPure® AAV9 Affinity Resin, 100 mL
	100AAV9-250	AVIPure® AAV9 Affinity Resin, 250 mL
	100AAV9-1000	AVIPure® AAV9 Affinity Resin, 1 L
	23051206	OPUS® MiniChrom® Pre-packed Column 5 x 50 mm, 1 mL, AVIPure® AAV9
	23051207	OPUS® MiniChrom® Pre-packed Column, 11.3 x 50 mm, 5 mL, AVIPure® AAV9
	23051204-100	OPUS® MiniChrom® Pre-packed Columns 8 x 100 mm, 5 mL, AVIPure® AAV9

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