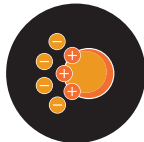


VIRUS PURIFICATION



ANION EXCHANGE



MIXED-MODE

## Virus Purification Resin Selection Guide

Bio-Rad offers a wide range of resins in various formats for each phase of process-scale virus purification.

Use this card to select the optimal resin for your downstream purification process.

### Optimal Resins for Virus Purification

Property	Resin Type									
	Anion Exchange Resins				Mixed-Mode Resins					
Resin type	Nuvia Q	Nuvia HP-Q	UNOsphere Q	Macro-Prep™ High Q	Nuvia cPrime	Nuvia aPrime 4A	CHT™ Ceramic Hydroxyapatite Type I	CHT Ceramic Hydroxyapatite Type II	CHT Ceramic Hydroxyapatite XT	
Chromatography type	Anion exchange	Anion exchange	Anion exchange	Anion exchange	Mixed-mode (HIC and cation exchange)	Mixed-mode (HIC and anion exchange)	Mixed-mode (cation exchange and calcium affinity)	Mixed-mode (cation exchange and calcium affinity)	Mixed-mode (cation exchange and calcium affinity)	
Mean particle size	85 µm	50 µm	120 µm	70 µm	70 µm	50 µm	40 and 80 µm	40 and 80 µm	40 µm	
Ionic capacity	100–170 µeq/ml	48–88 µeq/ml	120 µeq/ml	325–475 µeq/ml	110–150 µeq/ml	80–120 µeq/ml	–	–	–	
Dynamic binding capacity (DBC)*	≥170 mg BSA/ml at 300 cm/hr	≥50 mg thyroglobulin/ml at 300 cm/hr	≥180 mg BSA/ml at 150 cm/hr ≥125 mg BSA/ml at 600 cm/hr	≥37 mg BSA/ml	>40 mg hlgG/ml at 300 cm/hr >60 mg lactoferrin/ml at 300 cm/hr	≥50 mg mAb/ml at 300 cm/hr	25–60 mg IgG/ml at 300 cm/hr***	15–25 mg IgG/ml at 300 cm/hr***	>60 mg mAb/ml at 100 cm/hr	
Recommended linear flow rate	50–600 cm/hr	50–300 cm/hr	50–1,200 cm/hr	50–300 cm/hr	50–600 cm/hr	50–300 cm/hr	50–300 cm/hr	50–300 cm/hr	50–300 cm/hr	
pH stability (short term)	2–14	2–10	1–14	1–10**	3–14	2–14	6.5–14	6.5–14	6.5–14	
pH stability (long term)	4–12	2–10	1–14	1–10**	4–13	2–14	6.5–14	6.5–14	6.5–14	

BSA, bovine serum albumin; HIC, hydrophobic interaction chromatography; hlgG, human immunoglobulin G; mAb, monoclonal antibody.

Refer to bulletins 6790 and 6807 and additional resources at [bio-rad.com/ProcessLibrary](http://bio-rad.com/ProcessLibrary) to see how these resins help in process-scale virus purification.

\* Go to the product detail page on [bio-rad.com](http://bio-rad.com) or bulletin 6713 to see how the DBC was determined and for other technical details.

\*\* The use of basic reagents >pH 10 should be evaluated for each application.

\*\*\* 40 µm particles.

Visit [bio-rad.com/VirusChromResins](http://bio-rad.com/VirusChromResins) for more information.



**Anion Exchange Resins****Nuvia Q Resin**

- Best-in-class DBC at high flow rates
- High binding performance over a wide pH and salt range
- Large pores and optimized surface chemistry for large targets

[bio-rad.com/NuviaQ](https://www.bio-rad.com/NuviaQ)

**UNOsphere Q Resin**

- Efficient capture of biomolecules from crude feedstreams
- Robust polymer to withstand repeated clean-in-place cycles
- Optimal balance between resolution and binding capacity

[bio-rad.com/UNOsphereQ](https://www.bio-rad.com/UNOsphereQ)

**Nuvia HP-Q Resin**

- Ideal for large biomolecule purification
- Excellent pressure/flow properties
- Improved process economics

[bio-rad.com/NuviaHPQ](https://www.bio-rad.com/NuviaHPQ)

**Macro-Prep High Q Resin**

- Mechanically stable at very high flow rates
- Broad chemical stability
- Minimal shrinkage or swelling across various buffers

[bio-rad.com/Macro-PrepHighQ](https://www.bio-rad.com/Macro-PrepHighQ)

**Mixed-Mode Resins****Nuvia cPrime Resin**

- Versatile capture and recovery across a wide pH range
- Salt tolerance, reducing the need for feedstream dilution
- Fast mass transfer for low residency time without DBC loss

[bio-rad.com/NuviacPrime](https://www.bio-rad.com/NuviacPrime)

**CHT Ceramic Hydroxyapatite Media**

- Efficient, single-step clearance of impurities
- Superior process economics (cost and time efficiency)
- Unique selectivity

[bio-rad.com/CHT](https://www.bio-rad.com/CHT)

**Nuvia aPrime 4A Resin**

- Wide experimental design space
- Optimal product recovery
- Single-step removal of multiple impurities

[bio-rad.com/NuviaaPrime4A](https://www.bio-rad.com/NuviaaPrime4A)

**Foresight™ Pro Columns**

CHT Type I, Type II, and XT Media are available in prepacked GMP process-scale Foresight Pro Columns. A broad range of column diameters (5–33 cm inner diameter) and bed heights (10 or 20 cm) are available.

[bio-rad.com/ForesightPro](https://www.bio-rad.com/ForesightPro)

Go to [bio-rad.com/ResinSample](https://www.bio-rad.com/ResinSample) to request resin samples.

**Services and Support**

We offer multiple service and support levels to deliver solutions tailored to your needs.

- Method development
- Process development
- Column packing support
- Global technical support

**Global Supplier**

We are a global supplier of process resins and columns with more than 30 support sites across six continents. Contact your regional Bio-Rad process chromatography specialist by email at [process@bio-rad.com](mailto:process@bio-rad.com) or call our customer service at 1-800-4-BIORAD (1-800-424-6723).

Visit [bio-rad.com/VirusChromResins](https://www.bio-rad.com/VirusChromResins) for more information.

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