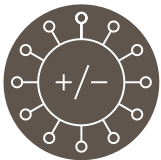


## Process Resin Solutions for Vaccines and Therapeutics



Bio-Rad offers a wide range of chromatography resins for the purification of viruses and viral particles for applications in vaccine development and disease prevention and for use as delivery mechanisms in gene therapy. Examples of workflows are listed in Tables 1 and 2. Virus purification results are shown in Figure 1.

**Table 1. Resins for virus purification.**

Application	Product	Bulletin
Single-step mammalian virus purification	CHT Mixed Mode	6790
Purification of viruses and virus-like particles	Nuvia Q	7200
Development of an adenovirus manufacturing process	Nuvia cPrime, Nuvia Q	6719
Swine influenza A H1N1 purification	Nuvia HP-Q	7375

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

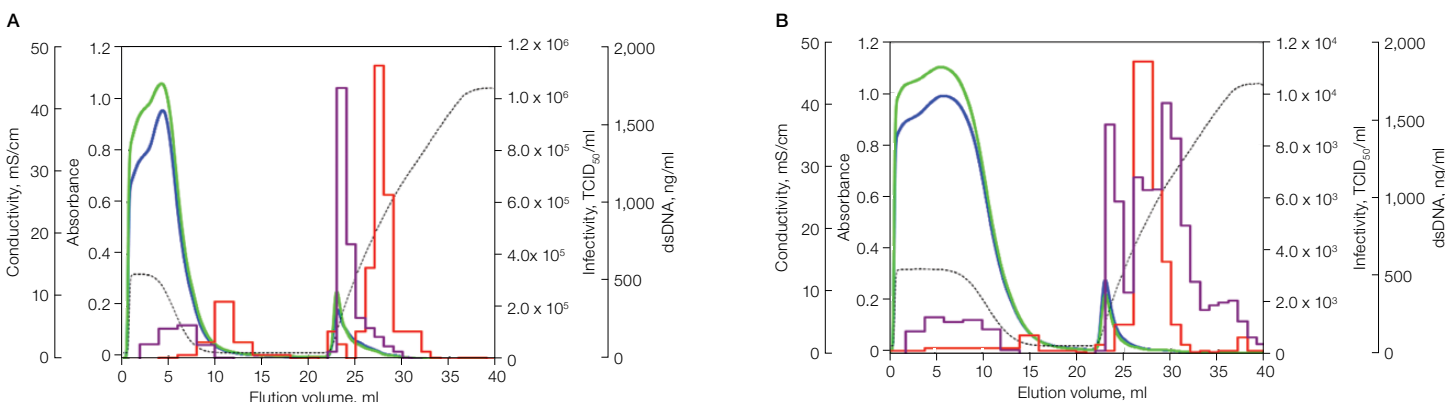


**Table 2. Wide variety of viruses that can be purified using CHT Media.**

Virus	Family	Genus	Genome	Envelope	Size, nm
Dengue	Flaviviridae	Flavivirus	ssRNA	+	50
Japanese encephalitis	Flaviviridae	Flavivirus	ssRNA	+	50
Influenza	Orthomyxoviridae	Influenzavirus	ssRNA	+	80–120
Mouse hepatitis	Coronaviridae	Coronavirus	ssRNA	+	100–150
Adenovirus	Adenoviridae	Mastadenovirus	ssRNA	–	90
Poliovirus	Picornaviridae	Enterovirus	ssRNA	–	30
Feline calicivirus	Caliciviridae	Vesivirus	ssRNA	–	30–38

Refer to [bulletin 6790](#) for more information.

Bioprocess resins for purification of therapeutics are shown in Table 3. Bio-Rad offers unique process chromatography resins, which provide purification benefits spanning a range of biomolecules. Choose from new selectivity and high-capacity chromatography techniques to maximize overall process efficiencies for your therapeutic.



**Fig. 1. Chromatography of two strains of mouse hepatitis virus (MHV), a coronavirus (CoV) that includes SARS-CoV. A, MHV-NuU; B, MHV-S.** UV absorbance at 260 nm (—); UV absorbance at 280 nm (---); conductivity (---); viral infectivity in TCID<sub>50</sub> (—); dsDNA (—). Culture fluid contained 10% fetal bovine serum. Refer to [bulletin 6549](#). TCID<sub>50</sub>, 50% tissue culture infective dose.

**Table 3. Resins for purification of therapeutics.**

Application	Product	Bulletin
Efficient antibody purification with novel selectivities	Nuvia Q, Nuvia S, Nuvia HR-S, Nuvia cPrime, CHT, UNOsphere SUPrA, UNOsphere Q	6889
Achieve higher yield and purity with sharper monoclonal antibody elution profiles	Nuvia HR-S	7000
Purification of large biomolecules with a high-capacity ion exchanger	Nuvia HP-Q	7127

**Reference**

Kurosawa Y et al. (2014). Mammalian virus purification using ceramic hydroxyapatite. *Bio-Rad Bulletin* 6549.

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