cytiva

Quick guide: setting up downstream processes for mAbs and antibody variants

Start here

Clarification	Bioburden filtration	Affinity chromatography capture	Low-pH virus inactivation	Precipitate removal and HCP clearance	Polishing (2-step strategy)	Virus filtration	UF/DF	Sterile filtration
Depth filter: Seitz™ PDP8 and PDE2 media	**Bioburden filter:** Supor™ EAV	**Protein A resin:** MabSelect™ resin family		**Charged depth filter:** Seitz PDL3 media	**Step 1 – CIEX resin (B/E):** Capto™ S ImpAct; **Step 2 – AIEX resin or membrane (FT):** Capto Q or Mustang™ Q	**Virus filter:** Pegasus™ Prime	**TFF cassette:** T-Series cassette with Delta membrane	**Sterilizing grade filter:** Supor Prime

OR — Polishing (1-step strategy): **Multimodal AIEX resin (FT or B/E):** Capto adhere

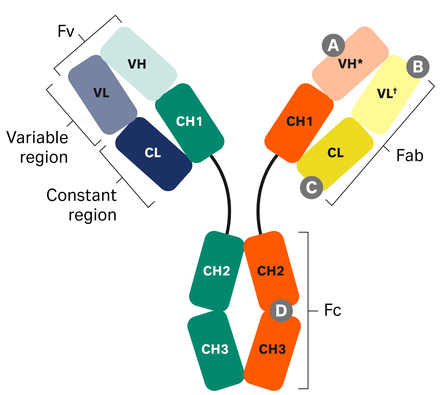
Working with mAb variants? See below.

Working with a tricky molecule? See below.

Working with antibody variants?

Adapt your affinity capture resin

Affinity capture for antibody variants differs from conventional mAbs. Find the right resin for your molecule based on its target domains, the impurity profile, and process conditions.



Protein A ligand

- A D MabSelect PrismA™ resin
- A D MabSelect PrismA X resin
- A D Fibro PrismA fiber units
- A MabSelect VH3 resin
- D MabSelect SuRe 70 X resin‡
- D MabSelect mild elution resin
- D MabSelect SuRe resin‡
- D MabSelect SuRe LX resin‡

Protein L ligand

- B MabSelect VL resin

Other ligands

- C KappaSelect resin
- C LambdaFabSelect resin

* VH3 sequence interacts with protein A.

† IgG kappa light chain variable region (VL) subclasses 1, 3, and 4 interact with protein L.

‡ Some VH3 interaction may occur for the MabSelect SuRe 70, MabSelect SuRe, and MabSelect SuRe LX resins.

Ready to evaluate our resins, membranes, or filters?

Contact us to request:

- A quote
- A sample
- A free consultation

Working with a tricky molecule?

Adapt your chromatography polishing strategy

If the recommended one- or two-step polishing protocols shown above aren't sufficient, you may need to adapt your strategy. Common challenges and ways to address them are shown here.

Challenge	Polishing step 1	Polishing step 2
Aggregate removal	**CIEX or HIC (FT or B/E)** Capto S ImpAct, Capto SP ImpRes, or Capto Phenyl (high sub)	**MM AIEX** Capto adhere ImpRes (B/E) or Capto adhere (FT)
Preventing antibody instability	**CIEX or HIC (FT)** Capto S ImpAct, Capto Phenyl (high sub), or Capto Butyl ImpRes	**AIEX or MM AIEX (FT)** Capto Q, Mustang Q, Capto adhere ImpRes, or Capto adhere
Homo- or heterodimer separation	**HIC or MM CIEX (FT or B/E)** Capto Butyl/Phenyl ImpRes or Capto MMC ImpRes	**MM AIEX** Capto adhere ImpRes (B/E) or Capto adhere (FT)
Charged variant separation	**CIEX or MM CIEX (B/E)** Capto S ImpAct, Capto SP ImpRes, or Capto MMC ImpRes	**MM AIEX (B/E)** Capto adhere ImpRes
Viral reduction	**CIEX, MM CIEX or HIC (FT or B/E)** Capto S ImpAct, Capto MMC ImpRes, or Capto Phenyl (high sub)	**AIEX or MM AIEX (FT)** Capto Q, Mustang Q, or Capto adhere
HCP removal	**CIEX or MM CIEX (B/E)** Capto S ImpAct or Capto MMC ImpRes	**AIEX or MM AIEX (FT)** Capto Q, Mustang Q, or Capto adhere
Endotoxin removal	**CIEX or MM CIEX (B/E)** Capto S ImpAct or Capto MMC ImpRes	**AIEX or MM AIEX (FT)** Capto Q, Mustang Q, or Capto adhere
ADC, DAR reduction post conjugation	**HIC** Capto Butyl ImpRes or Capto Phenyl ImpRes	

This guide shows a selection of suitable filters and resins. More options are available on our website.
End-users must always ensure Freedom to Operate for the specific processes used for purifying their specific molecules.

ADC = Antibody-drug conjugates
AIEX = Anion exchange chromatography
B/E = Bind and elute mode
CIEX = Cation exchange chromatography
DAR = Drug-to-antibody ratio
FT = Flowthrough mode
HCP = Host cell proteins
MM = Multimodal
TFF = Tangential flow filtration
UF/DF = Ultrafiltration/diafiltration

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