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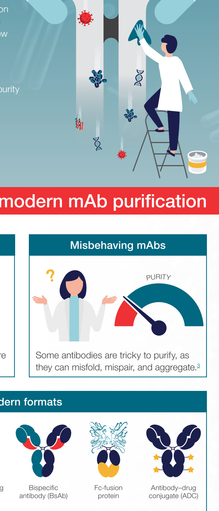
Polishing pathways: Enhancing antibody purity and performance



Monoclonal antibodies (mAbs) are transforming medicine, redefining standards in oncology, immunology, and beyond.[1] However, the rapid advancement of mAb therapeutics is now outpacing the capacity of downstream bioproduction workflows. Modern formats such as bispecific antibodies (BsAbs) and Fc-fusion proteins, as well as increased production levels of traditional mAbs, are creating new challenges in purification.[2]

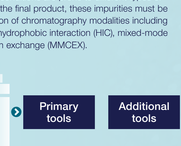
This infographic provides a simple guide for selecting the appropriate polishing chromatography methods to address impurity removal challenges at different scales.

Core challenges in modern mAb purification

High titers of standard mAbs

With improved upstream efficiency, more product can mean more impurities.[2]

Misbehaving mAbs



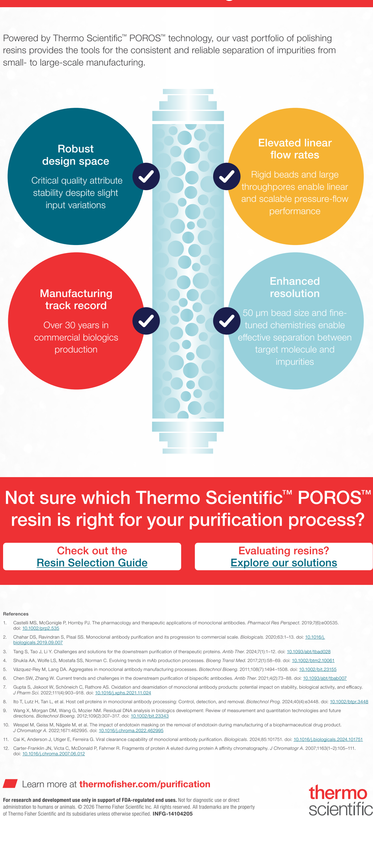
Some antibodies are tricky to purify, as they can misfold, mispair, and aggregate.[3]

Modern formats

Advanced mAb formats bring additional complexity, often requiring tailored purification strategies.[4]

Matching impurities with the right solution

Different mAb structures, formats, and process conditions are prone to different types of impurities. To support the purity and stability of the final product, these impurities must be removed efficiently—often requiring a combination of chromatography modalities including anion exchange (AEX), cation exchange (CEX), hydrophobic interaction (HIC), mixed-mode (MMC) chromatography, and mixed-mode cation exchange (MMCEX).



*In addition to non-chromatography viral control methods.

Overcoming impurities from bench to manufacturing scale

Powered by Thermo Scientific™ POROS™ technology, our vast portfolio of polishing resins provides the tools for the consistent and reliable separation of impurities from small- to large-scale manufacturing.

Not sure which Thermo Scientific™ POROS™ resin is right for your purification process?

Check out the Resin Selection Guide

Evaluating resins? Explore our solutions

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