

Got Purification Troubles?

Maximize Monomer Recovery during mAb Purification



The Challenge

Is separating mAb monomers from aggregates a major challenge for you? Are traditional unimodal resins just not working? Despite using mixed-mode resins, are you unable to attain the expected yield while maintaining purity requirements?



Purification Tip

Each mixed-mode resin interacts in a unique way to the biomolecule you are purifying. Be sure to screen multiple mixed-mode resins to achieve the most efficient purification process optimized for highest possible target purity and recovery.



Our Approach

We compared the efficacy of three commercial mixed-mode resins for the purification of mAb S (approx. pI 6.9) in a Protein A eluate containing about 75% monomeric and 25% aggregated mAb. Each media reduced the aggregate levels to below 0.5% (Table 1). However, CHT Ceramic Hydroxyapatite Type I, 40 μ m offered significantly higher monomer recovery in the smallest eluate volume (Figure 1 and Table 1). Refer to Bio-Rad bulletin 6749 for complete details on the study.

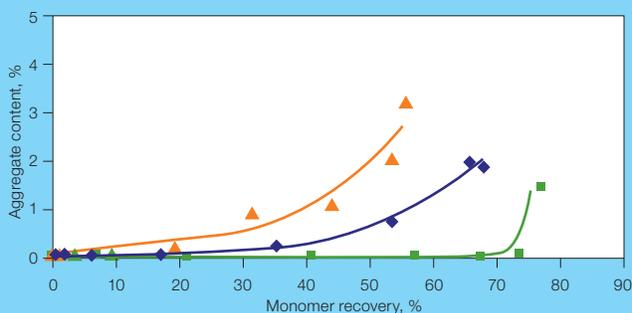


Fig. 1. A bind-and-elute strategy was employed for the polish purification of mAb S with the three media. Salt and pH gradients were optimized from DoE studies for the separation of aggregate from monomer. CHT Column, 1 ml, 0–1,000 mM sodium chloride gradient (■); Capto adhere Column, 1 ml, pH 8–5 gradient (◆); Capto adhere ImpRes Column, 1 ml, pH 8–5 gradient (▲).

Table 1. Comparison of CHT, Capto adhere, and Capto adhere ImpRes mAb S aggregate clearance and monomer recovery.

Media	mAb S Monomer Content, %	mAb S Monomer Recovery, %	Eluate Volume, CV
CHT*	99.5	82.7	5
Capto adhere**	99.5	48.8	14
Capto adhere ImpRes***	99.5	61.7	14

* Step elution with 10 mM sodium phosphate and 550 mM sodium chloride, pH 7.0.

** Step elution with 50 mM sodium acetate, pH 5.5.

*** Step elution with 50 mM sodium acetate, pH 5.4.



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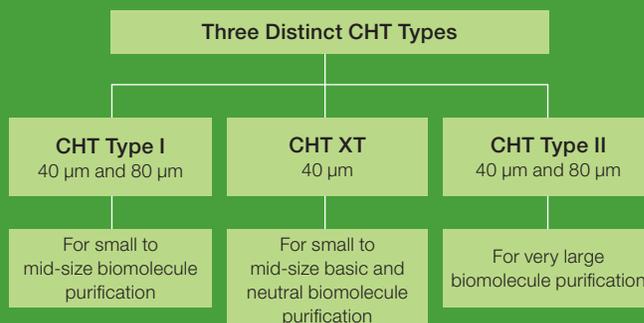
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