

MAb Charge Variant HPLC Purification using High Resolution Proteomix NP SCX In Continuous IEX Chromatography with Sepax Technologies



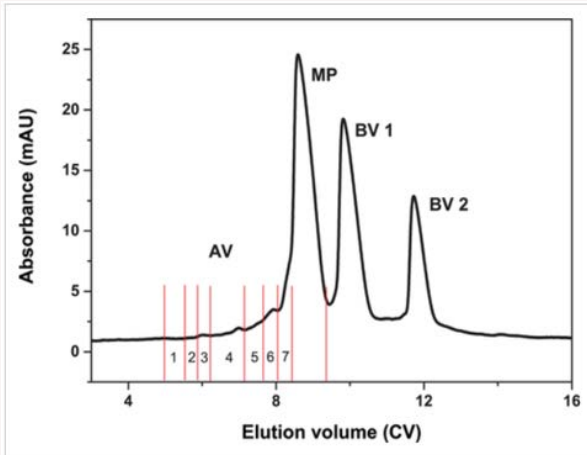
With the constant evolution of infectious diseases, monoclonal antibodies have carved a niche in the biopharmaceutical market. Still, mAbs are not as homogenous as we would like and variants are formed through the manufacturing process. The industry is developing new ways to enhance the separation of the mAb charge variants. At the forefront in mAb charge variant purification is cation exchange chromatography.

In this published study, **A Novel Twin-column Continuous Chromatography Approach for Separation and Enrichment of Monoclonal Antibody Charge Variants** <https://doi.org/10.1002/elsc.202000094>, an analytical high resolution HPLC method was scaled-up to purify and collect individual acidic charge variants. By utilizing **Sepax's high performance HPLC resins**, the integrity of the separation was maintained when transitioned to purification dimensions/loading. The paper highlights utilizing traditional batch mode chromatography (single injection) on our Proteomix SCX NP10 21.2X250mm column vs. continuous N-rich process on our Proteomix SCX NP10 10X50mm column. Both batch mode and continuous mode offered similar purity (~100%) and loading. However, the N-rich continuous method offered advantages in higher variant yields of 86.21% N-rich vs 59.18% batch.

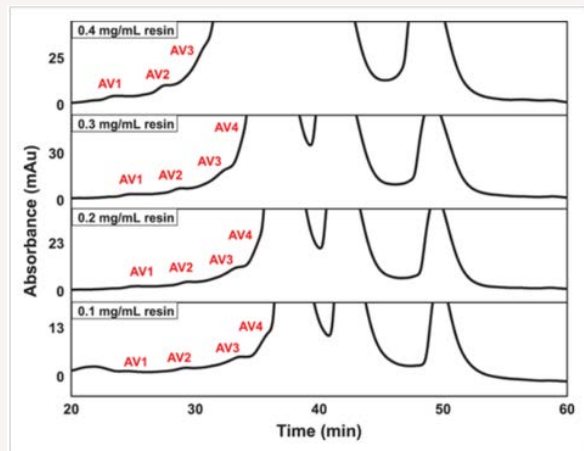
Read our full Literature Reference [here](#).

	<i>Analytical Method</i>	<i>Batch Chromatography</i>	<i>Continuous Chromatography</i>
Column	Antibodix WCX-NP5	Proteomix SCX-NP10	Proteomix SCX-NP10
Part Number	602NP5-4625	401NP10-21225	401NP10-10005
Dimensions	4.6 mm x 250 mm	21.2 mm x 250 mm	10 mm x 50 mm x2
CV	4.15 mL	88.20 mL	3.93 mL x2
Buffer A	20 mM PBS, pH 6.5, 0.05 M NaCl	20 mM PBS, pH 6.5, 0.05 M NaCl	20 mM MES, pH 5.6, 0.01 M NaCl
Buffer B	20 mM PBS, pH 6.5, 0.1 M NaCl	20 mM PBS, pH 6.5, 0.9 M NaCl	20 mM MES, pH 5.6, 0.25 M NaCl
Flowrate	0.8 mL/min	230 cm/hr	230 cm/hr
Dectector/ Load	UV Absorbance at 280 nm	0.2 mg protein/mL of resin/ 17.64 mg	0.1 mg protein/mL of resin/ 17.54 mg
Gradient	0-100% in 30 mins	0-100% in 12 cv	0-50% in 12 cv

Batch Mode

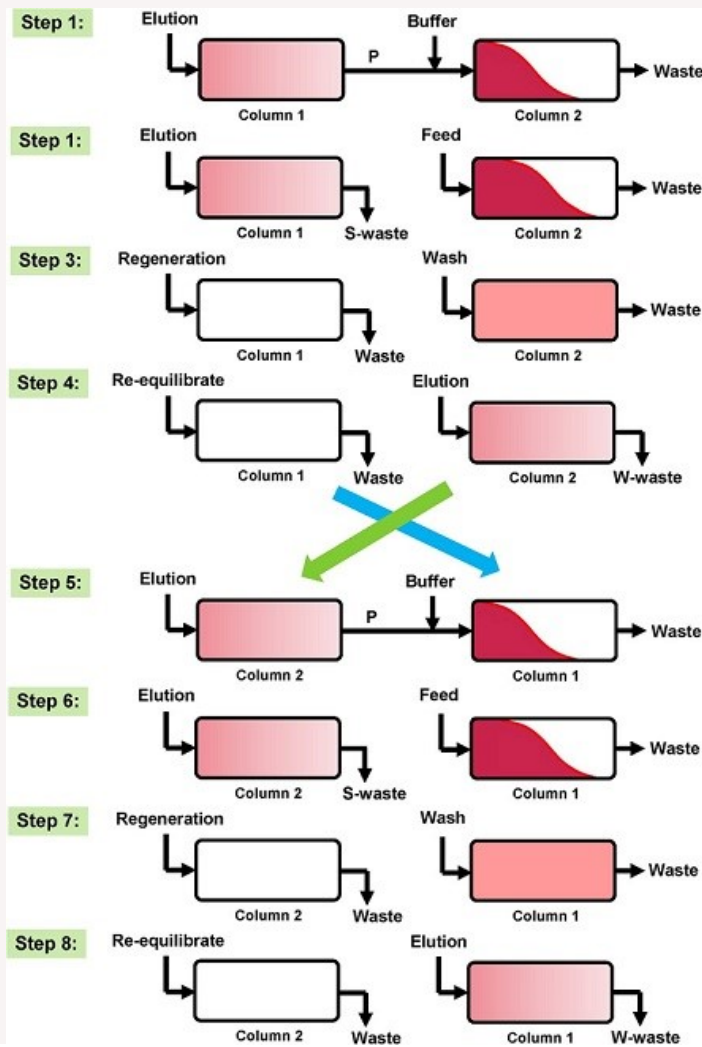


Proteomix SCX-NP10, 4.6 x 250 mm



Proteomix SCX-NP10, 21.2 x 250 mm

Continuous N-rich process



Scheme of accumulation phase of N-rich process with twin-column continuous chromatography.

Sepax Order Information

Proteomix SCX-NP10, 4.6 x 250 mm

Part Number: 401NP10-4625

Proteomix SCX-NP10, 10 x 250 mm

Part Number: 401NP10-10025

Proteomix SCX-NP10, 21.2 x 250 mm

Part Number: 401NP10-21225

Proteomix SCX-NP10, 10 x 50 mm

Part Number: 401NP10-10005

Antibodix WCX-NP5, 4.6 x 250 mm

Part Number: 602NP5-4625

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Reach our Technical Support: TechSupport@sepax-tech.com