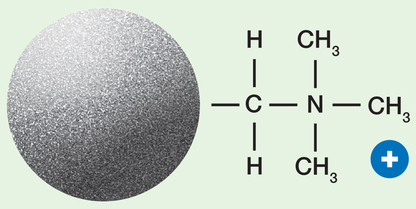
High Performance Resin for Larger Biomolecules such as AAVs and pDNA

Ion exchange media are widely used in the purification of biomolecules. As the molecules of biopharmaceutical interest are becoming larger, the demands on the process resins are also changing. Large particles and molecules like adeno-associated viruses (AAV) and pDNA require larger pores to ensure sufficient interaction with the resin. Modern process resins that offer a high dynamic binding capacity (DBC) for these larger biomolecules enable higher sample loadings. In addition, the base particle contributes massively to the process productivity. Resins based on hydrophilic polymer beads provide low backpressures and can be used at high flow rates.
The innovative AEX resin MacroSep IEX Q meets these demands and improves the economics and efficiency of downstream processes of large biomolecules.

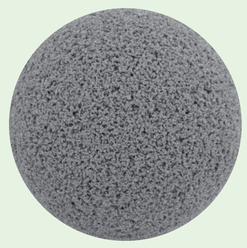
Superior Resin Characteristics

- **Optimised pore size for large biomolecules**
- **Excellent pressure flow characteristics**
- **Improved resolution at high flow rates**
- **Increased DBC for large biomolecules**
- **Long lifetime for increaed productivity**

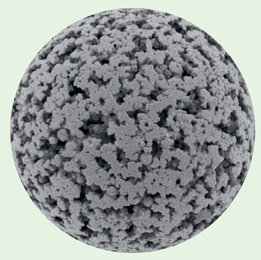
Strong anion exchanger



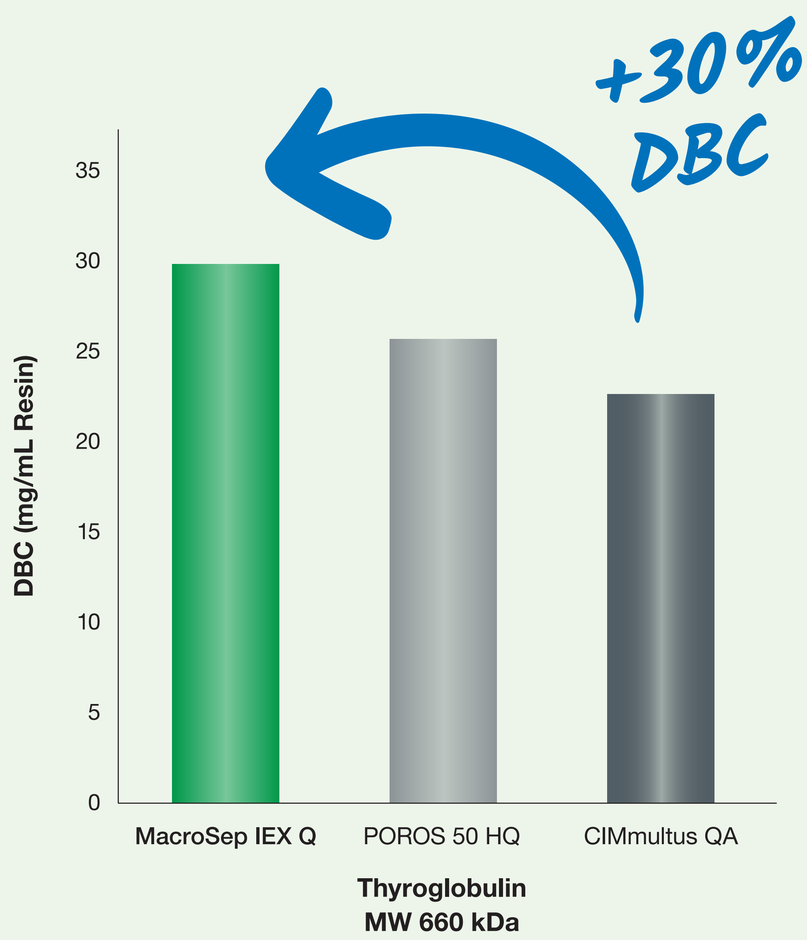
BioPro IEX SmartSep 30 µm



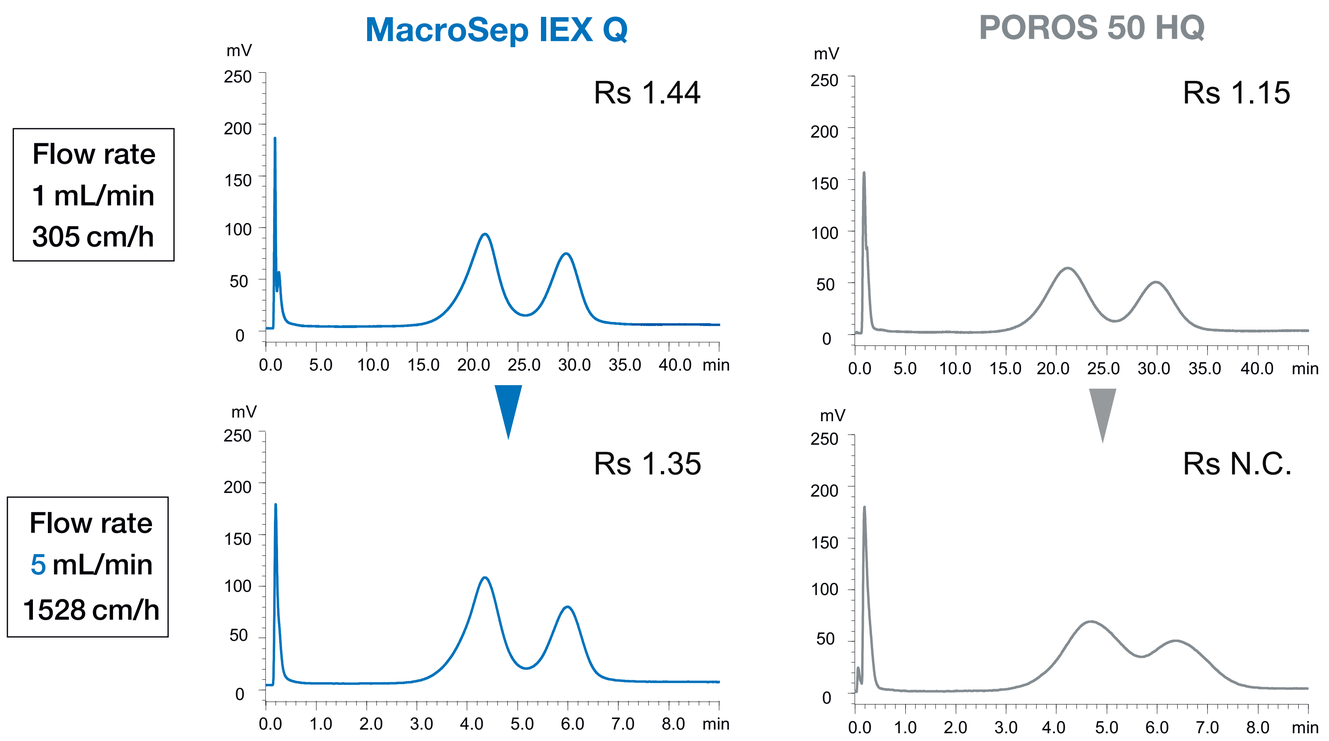
MacroSep IEX 30 µm



High DBC for Large Molecules



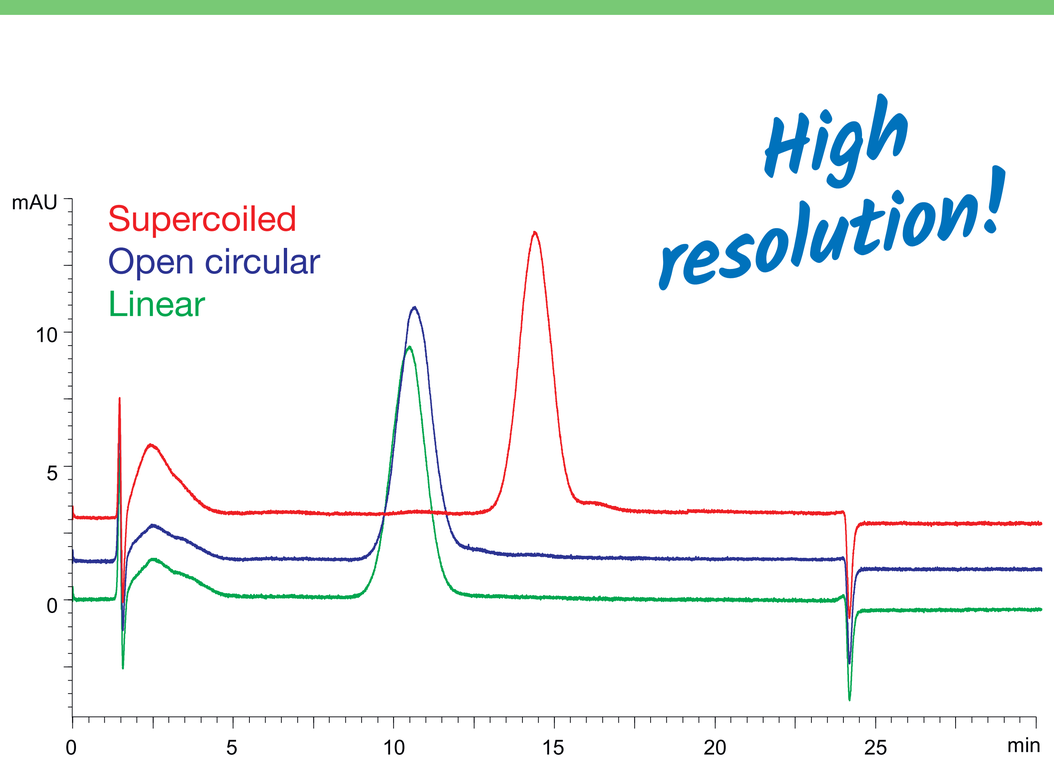
Excellent Pressure Flow Characteristics



Columns: MacroSep IEX Q, 50 x 5.0 mm ID
POROS 50 HQ, 50 x 5.0 mm ID
Eluent: A) 20 mM BTP-HCl, (pH 9.0)
B) 20 mM BTP-HCl containing 0.5 M TMAC (pH 9.0)
Gradient: 10–50%B (45 CV), 100%B (10 CV), 10%B (10 CV)

Injection: 30 µL
Detection: FLS at Ex. 280 nm, Em. 348 nm
Temperature: 25 °C
Sample: AAV2 (1.07×10^{11} vg/mL)

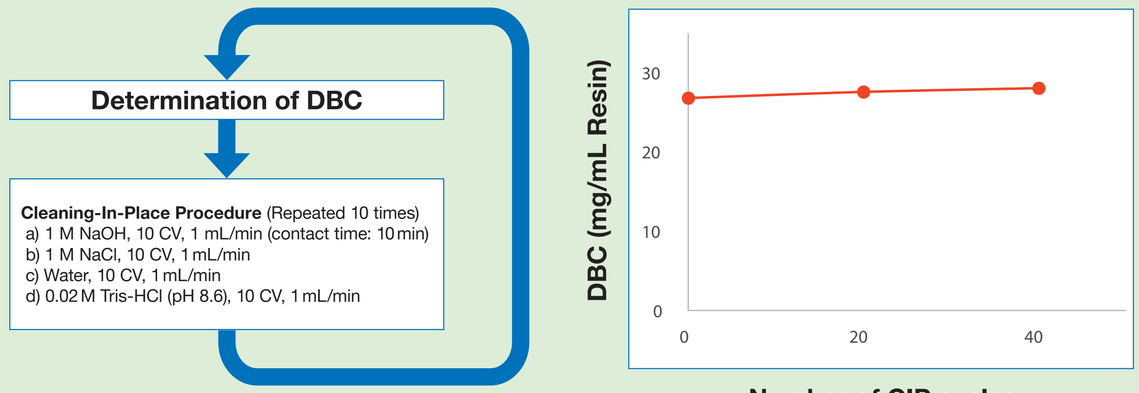
Separation of Supercoiled, Open Circular and Linear pDNA



Column: MacroSep IEX Q, 100 x 4.6 mm ID
Eluent: A) 20 mM Tris-HCl, (pH 8.5) containing 0.7 M NaCl
B) 20 mM Tris-HCl (pH 8.5) containing 1.0 M NaCl
Gradient: 40%B (0–1.5 min), 40–53%B (1.5–22.5 min), 100%B (22.5–30 min), 40%B (30–40 min)

Flow Rate: 0.8 mL/min
Temperature: 25 °C
Detection: UV at 260 nm
Injection: 10 µL

Proven Alkaline CIP Stability with 1 M NaOH



Specifications	MacroSep IEX Q
Matrix	methacrylate-based hydrophilic porous polymer
Charged Group	$-R-N^{+}(CH_3)_3$
Particle Size	30 µm
Pore Size	900 nm
pH Range	2–12
Pressure Resistance	regular use: 2 MPa max: 3 MPa
Ion Exchange Capacity	min 0.08 meq/mL-resin
Temperature	4–60 °C

Contact us for more information

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