Semba® Biosciences

Innovations in Molecular Separation

MAB Purification with SMB Chromatography and Semba Octave™ System

Semba Octave™ Chromatography System

- A versatile bench top 8-column system
- Capable of performing SMBC and other continuous automated separation protocols
- Suitable for milligram-to-multigram scale purification
- 100% biocompatible flow path
- SembaPro™ software controls multiple protocols
- Compatible with many commercially available purification columns and chromatography process media

Height: 27"/ 69 cm

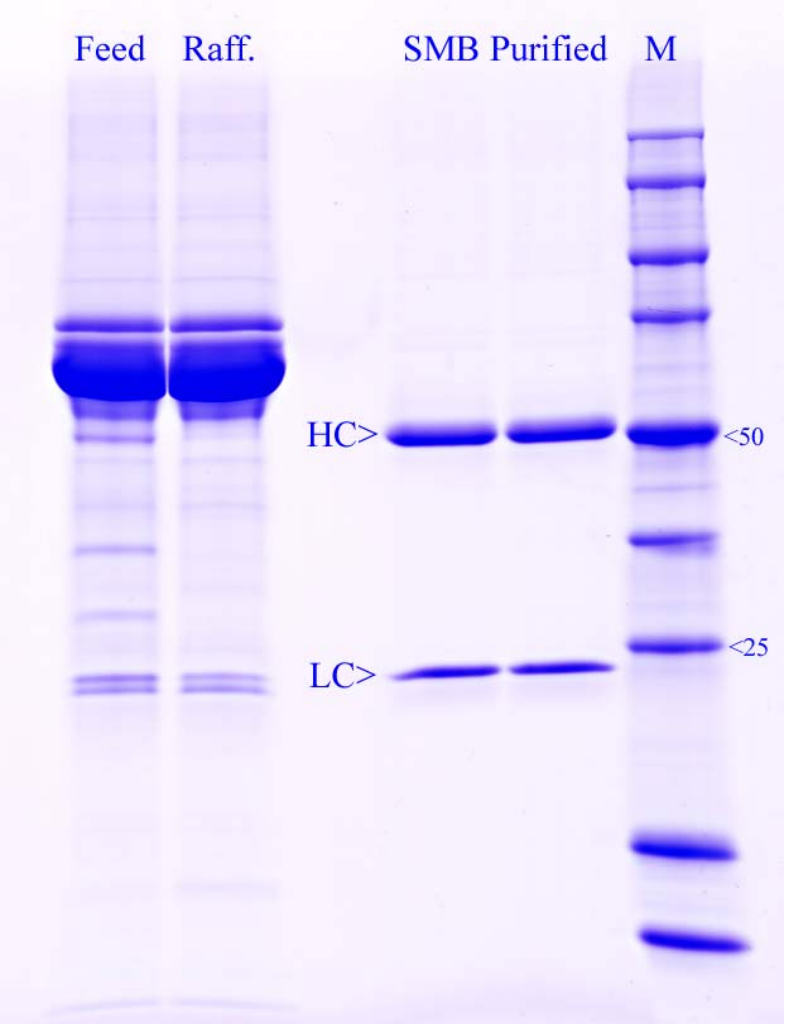
Width: 21.5"/ 57 cm

Depth: 21"/ 54 cm

Weight: 150 lb / 68 kg

MAb Purification – Protein A

- Parameters for Protein A SMBC
  - POROS® MabCapture™ A (8 x 1.0 ml columns)
  - Step Mode Configuration
  - Feed flow rate 5.0 ml/min concentrated tissue culture fluid (1 g/L antibody concentration)
- Results
  - Productivity 200 mg/h
  - Purity >99%
  - Recovery 95%



MAb Purification – Single Column vs Step SMBC

- MAb were purified using single column affinity purification with a similar yield (95%) and purity > 95%

Purification Mode	Protein A Resin	Buffer	Time
Single Column	100 ml	960 ml	6.2 h
Step-SMBC	8 x 1 ml	320 ml	1.8 h

SMBC for Protein Purification

- Semba Octave™ System accelerates process development and scale-up times leading to gram amounts of pure protein faster
  - Two fractions to analyze: extract (target protein) and raffinate (untagged proteins, unwanted cellular components)
  - No product variability – fractions collected after the system reaches equilibrium do not change
  - Ideally suited for affinity purifications, SEC and other separations
  - The CIP step can be incorporated in the protocol controlled by the SembaPro™ software