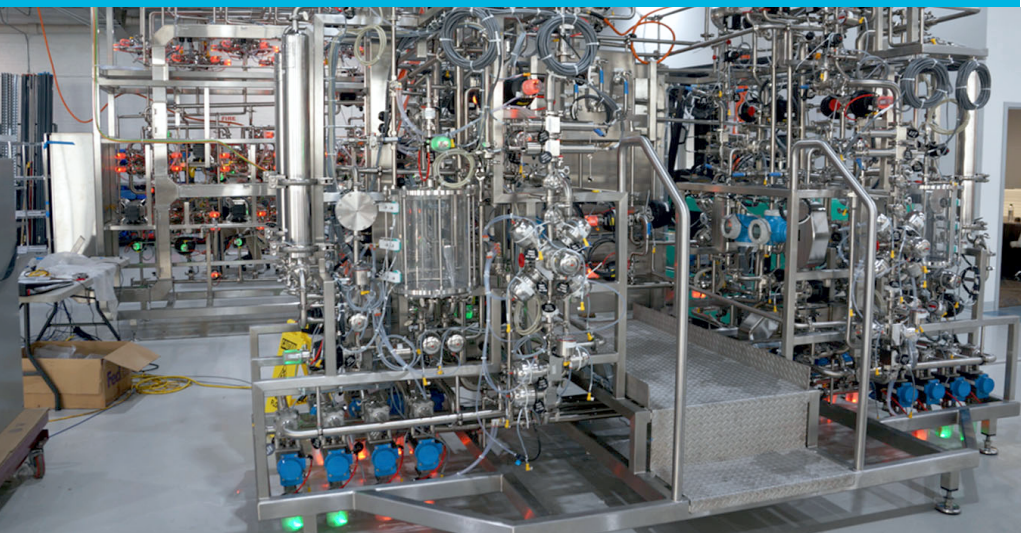


Large Scale Cell Culture Sequential-Multicolumn- Chromatography

Confidential Client



MANDATE

Exentec was retained to design and construct a 4-column sequential multi-column chromatography (SMCC) system along with a 6-pump buffer exchange unit, capable of loading the columns and delivering up to 20 different buffers to any of the system's columns.

Buffer feed and product paths were designed for steam-in-place (SIP), while the internal buffer and product paths within the system were chemical sanitizable and capable of clean-in-place (CIP) with the installation of buffer feed and column CIP manifolds. To accommodate the customer's space limitations, all 4 chromatography paths were housed within a single skid frame that included a central platform for maintenance accessibility. A transfer panel accessible from the central platform also allowed configuration of the chromatography system into a 2, 3 or 4 column sequential system. To ensure that chase and elution volume requirements remained constant regardless of the number of columns utilized, care was taken to ensure that all feed and product path lengths were equivalent.

DESCRIPTION | FEATURES | BENEFITS

The four-column sequential multi-column chromatography (SMCC) system with 6-pump buffer exchange unit included the following parameters:

- 0.5-53 LPM multi-diaphragm feed pumps
- Feed static mixers
- Bubble traps
- Feed filters
- Pre-column air sensors
- Pre- & post-column conductivity & pH
- CIP rinse conductivity
- Post column dual UV sensors
- 2-6 port block diaphragm valve
- Controls/software
- Customer supplied DeltaV programming

exentec

BioPharma Solutions

Pharmaceutical /
Biopharmaceutical

SECTOR OF ACTIVITY:

Biopharmaceutical

CLIENT:

Confidential Client

YEAR OF COMPLETION:

2024

TOTAL PROJECT COST US \$:

Confidential

EXENTEC PROJECT VALUE US \$:

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SERVICES PROVIDED

Exentec scope of work included:

Process engineering

- Up to 1m Ø columns
- Product loading
- Washing & equilibration
- Isocratic or gradient elution
- Product collection
- Waste segregation
- Feed & product SIP
- System CIP plan & manifolds

Interconnecting wiring design

Equipment, valve &
instrumentation selection

Mechanical skid designs

- 3D model
- Equipment layout
- ASME BPE compliant piping design
- Piping sloped for gravity draining
- Transfer panel
- Path length equalization
- Maintenance accessibility

System fabrication

- Skid frame fabrication
- Pipe manifold fabrication & documentation
- Instrumentation installation & wiring
- Quality documentation
- Material test reports
- Video borescope
- Weld mapping
- Factory acceptance testing

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for details or for a quote

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