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Contichrom[®] Twin-column FPLC Chromatography

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Process Control and Optimization by AutomAb[®]

Contichrom® For Continuous Biomanufacturing





The Three Pillars of Continuous Chromatography



New Regulatory Structure Based on Three Pillars



Process Control by AutomAb®

AutomAb[®] has two elements:

- Automated Process Optimization during Process Development
- Dynamic process control during long-term operation of the CaptureSMB[®] capture processes (2C PCC)

Both elements have been implemented with the Contichrom[®] CUBE

Both elements are patented are part of the ChromIQ[®] operating software suite



AutomAb Process control based on peak areas

• Concept: Keep breakthrough on next column constant (A2 by monitoring the breakthrough area in between the two columns during sequential loading.



- Contichrom CUBE uses wide-range detector so UV signal is in the linear range at 280 nm during product elution.
- Accounts for potential loss of column capacity and feed titer change

AutomAb Process optimization based on elution peak areas

- Concept: Make use of the linear correlation elution peak area A and load L (if Load << dynamic capacity)
- Example:



• Contichrom CUBE uses wide-range detector so UV signal is in the linear range at 280 nm during product elution.

AutomAb capture optimization concept



 Optimal load: Maximize load while remaining on straight line. (A1= max, A2 = 0)

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AutomAb Process optimization based on elution peak areas

- Process development time and resource savings through use of CaptureSMB (2C PCC) AutomAb[®] optimization.
- AutomAb[®] is a process development tool for fully automated optimization of the CaptureSMB process within a single run (< 1 day) without process knowledge (BT curves etc.)
- Dynamic process control: adaptation to variations in feed, column effects and resin capacity





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