



CHROMATOGRAPHY ChromLab Software

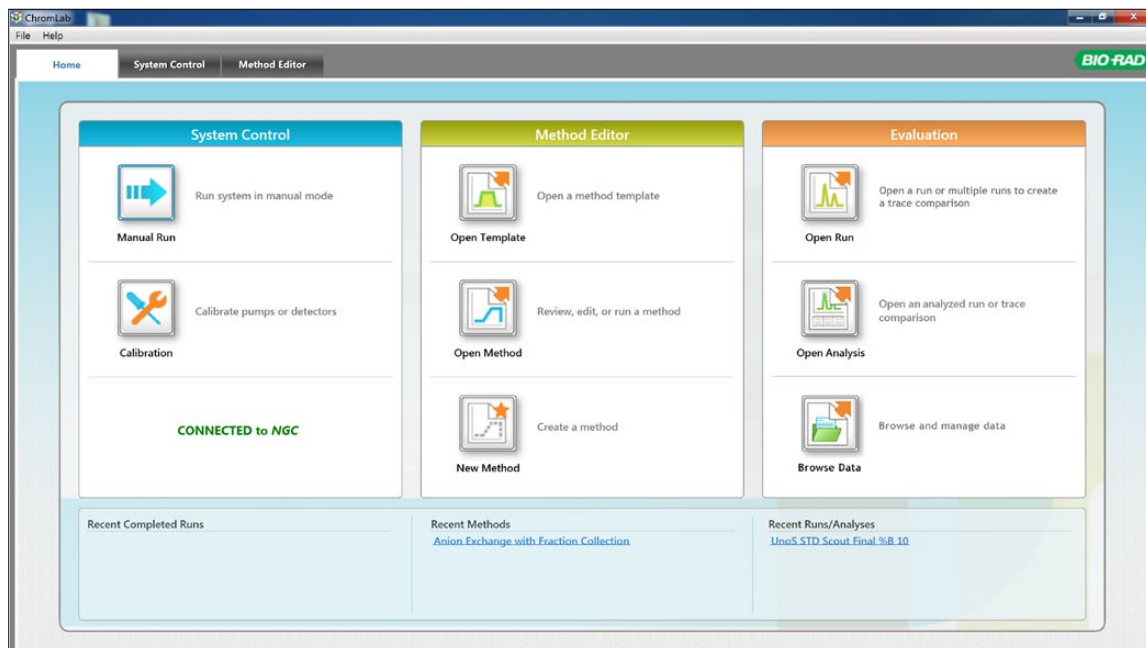
- Real-time monitoring of proteins, peptides, nucleic acids, and chromophores
- Rapid creation of trace comparisons for easy analysis across multiple purification runs
- Customizable chromatogram layouts with viewing and data analysis options
- Simplified method optimization and multistep automation with scouting and tandem templates
- VNC remote system control for flexibility and peace of mind
- U.S. FDA 21 CFR Part 11 compliance with ChromLab Software, Security Edition
- Multisystem control from a single PC
- Easy data storage on a centralized database with ChromLab Software, User Management Edition
- Edit on the fly during a method run

Comprehensive Protein Purification Control

ChromLab Software is the integrated software package for the NGC Chromatography System. It controls all functions for laboratory-scale protein purification, including instrument setup and calibration, method development, real-time monitoring and system control, chromatogram comparison, and rapid data analysis.

Intuitive Graphical Interface

All key functions are readily accessible from the home screen where you can easily navigate among system control, method development, and data analysis options.



Ultimate Flexibility

ChromLab Software provides the flexibility of collecting fractions where and how you want. Determine the collection rack type and rack position to easily visualize your collection scheme for an entire method.

Need to make changes during a method? Now you can with edit-on-the-fly capabilities.

1 Customize your vessel collection configuration from the rack selection library

2 Optimize collection with the ability to quickly change the starting location

3 Take advantage of collection flexibility with the option to collect each phase into different types of vessels

4 Collect based on these trigger options – detector signals, conductivity, pH, and %B

5 Exert ultimate system control with the ability to edit on the fly and save as a new method during current run

Configure Racks and Fractions in Tray

Arrange Tray Start Position

Drag racks or click on the racks buttons to arrange the racks in the tray

Method Racks

13 mm

Additional Racks

16 mm

18 mm / 15 ml

30 mm / 50 ml

2 ml microtube

96-well microplate

48-well microplate

24-well microplate

Bottles 4 x 250 ml

Remove Selected Rack

Remove All Racks

Help

OK Cancel

Schedule Run on NGC

System Name: NGC

Method Name: test 6

Run Name: Run 01

Notes:

Multiple Runs

Fraction Placement:

Start Location	End Location	Estimated Count	Max Size (ml)
%D/1	%D/5	5	10.00
%C/1	%C/1	1	5.00
%C/2	%C/3	2	2.00
%P1/1	%P1/40	40	0.25

Delay volume:

FC1 NGC FC: 882 µl

FC2 NGC FC: 862 µl

Outlet: 560 µl

Email when run completes

Create run report

Fraction Collection Scheme

Enable NGC FC Outlet Valves

Collection Schemes

Collect All

Threshold

Collection Windows

Threshold Collection Options

Signal	Trigger	Slope (MAU/CV)	Intensity (mAU)	Peak Width (CV)
Start	λ 3 (280 nm)	Intensity	500	0
End	λ 1 (215 nm)	Intensity	-500	0
	λ 2 (255 nm)			
	λ 3 (280 nm)			
Above Th	Rate	Start Location	Fraction Size (ml)	Pattern
Below Th	Conductivity	Next Tube	0.25	Serpentine
	pH	Next Tube	1	Serpentine
	%B			

Fraction Collection Scheme

Enable NGC FC Outlet Valves

Collection Schemes

Collect All

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Collection Windows

Threshold Collection Options

Signal	Trigger	Slope (MAU/CV)	Intensity (mAU)	Peak Width (CV)
Start	λ 3 (280 nm)	Intensity	500	0
End	λ 3 (280 nm)	Intensity	-500	0
	Slope			
	Rack	Start Location	Fraction Size (ml)	Pattern
Above Threshold	96-well micro	Next Tube	0.25	Serpentine
Below Threshold	Waste	Next Tube	1	Serpentine

Method Control

Next Step Zero Baseline NGC FC Outlet Collector Next Tube

Active Pumps: System Pump

Current Flow Rate: 1.500 ml/min

New Flow Rate: 1.500 ml/min

Apply

Flow Rate

Gradient Segment

Valves

Fraction Collection

Status: Isocratic 0.0 %B Final %B 9.22 Volume (CV) 0

New: Isocratic 0.0 %B 9.22

Clear Apply

Flow Rate

Gradient Segment

Valves

Fraction Collection

Changing inlet valves port is not allowed when method uses buffer blending.

Flow Rate

Gradient Segment

Valves

Fraction Collection

Current Fraction Size: 0.00 ml

New Fraction Size: 0.00 ml

Apply

Convenient Touch-Screen Control

The instrument control interface is touch-screen optimized to allow access to all pertinent information, manual control, and routine calibration of the NGC System. Assign air sensor positions and fine tune air detection by setting the detectable bubble size to prevent unnecessary stops in your purification method.

The screenshot displays the NGC Discover Pro software interface, which is touch-screen optimized. It features a central chromatogram showing detector response over time. A menu is open, listing various system management options. Below the chromatogram is a detailed fluidic scheme diagram of the instrument, showing pumps, valves, sensors, and detectors. Three control panels are overlaid on the interface, providing detailed settings for the System Pump F10, System Settings - NGC, and the Multi Wave Detector.

Menu Options:

- Calibrate
- Point-to-Plumb
- Change Fluidic Scheme...
- Map Fluidic Scheme...
- System Settings...
- System Information...
- Service...
- Help...
- About...
- Shut down
- Exit

System Pump F10 Settings:

- Mode: Buffer Blending
- Buffer System: Acetate, Conc: 0.100 M
- Gradient Type: Salt, pH: 4.70
- Flow Control: Flow Rate (0.002-20): 1.000 ml/min
- Gradient:

Mode	%B	Final %B	Duration min	
Status	Isocratic	0	0	10
New	Isocratic	0	0	10
- Pressure Limits: Lower: 6 psi, Upper: 3650 psi
- Control Flow to avoid overpressure:
- Enable Air Sensor:

System Settings - NGC:

- Air Sensor Ports:

#	Buffer	Sample	Port
1	System Pump A		
2	Buffer A 3		
3	System Pump B		
4	Buffer B 4		
5	S1 Port 3		
6	Sample Pump		
7	Not Used		
8	Not Used		
- Sample Air Sensing: Tube Diameter: 0.002 in, Tube Length: 20.00 cm, Bubble Size: 67 mm
- Buffer Air Sensing: Tube Diameter: 0.002 in, Tube Length: 20.00 cm, Bubble Size: 67 mm

Multi Wave Detector Settings:

- Number of Wavelengths: 4
- Wavelength 1: 215 nm
- Wavelength 2: 255 nm
- Wavelength 3: 280 nm
- Wavelength 4: 495 nm
- Lamps: On, Off

Fluidic Scheme Parameters:

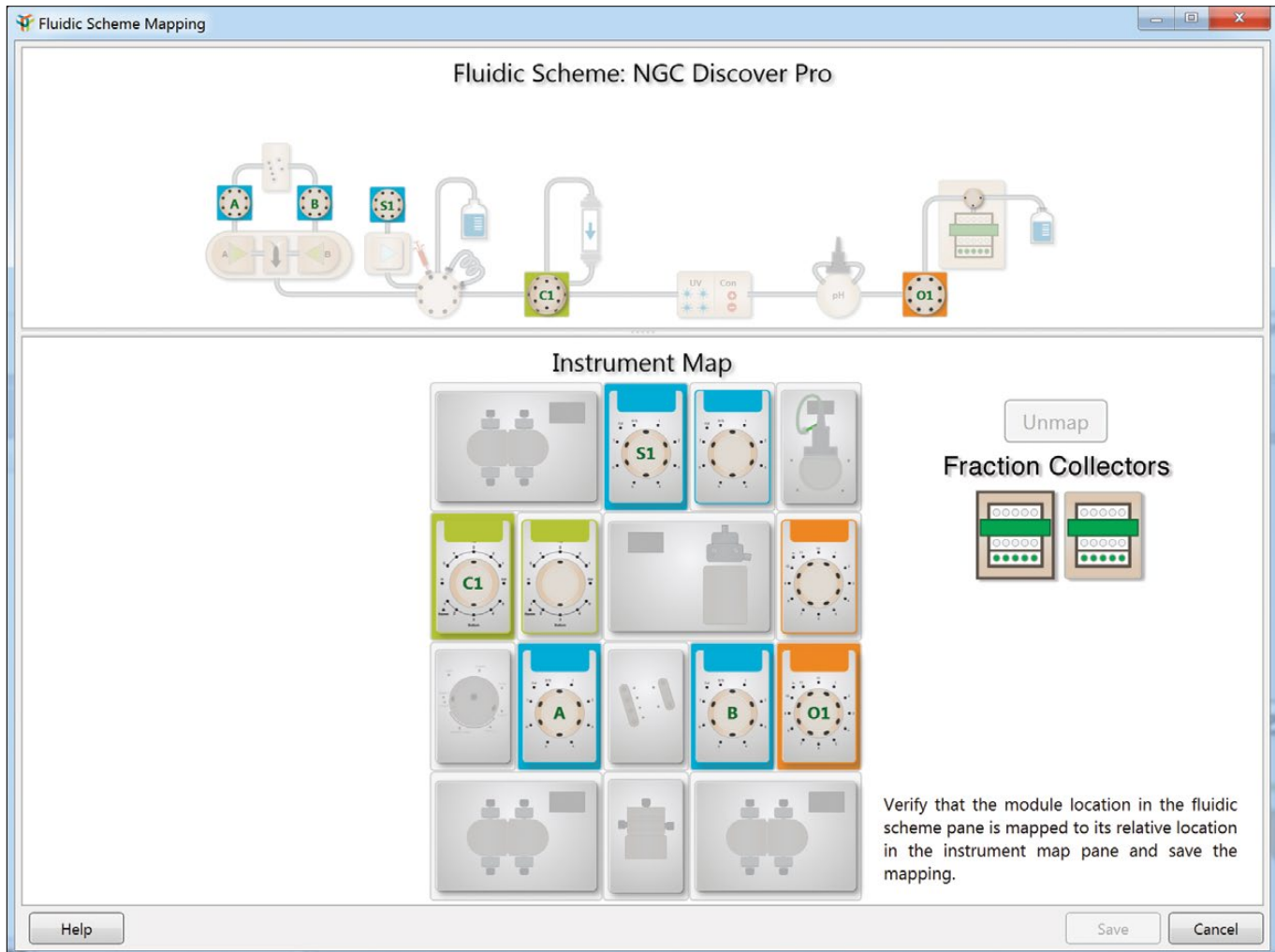
- Flow Rate: 0.000 ml/min
- Pressure: 36 psi
- Buffer %B: 0.0 %B
- PreCol: 15 psi
- ΔCol: 5 psi
- Wavelengths:
 - λ1 (215 nm): Standby
 - λ2 (255 nm): Standby
 - λ3 (280 nm): Standby
 - λ4 (495 nm): Standby
- Flow Rate: 2.6 mS/cm
- Temperature: 25.0 °C
- pH: 7.00

Fraction Collector Viewer:

- Port: []
- Volume: []
- Ports Remaining: []
- Delay Vol. (Outlet): Off

Simplified Configuration

Module mapping helps configure the system to minimize tubing length and dead volume. Easily place modules where they are needed, and in a few simple steps the system is plumbed and ready to use. The mapping feature seamlessly associates the system configuration with the application.



Streamlined Method Development

Methods are created based on functional phases so the user can easily build a method from scratch — no block programming required. Dynamic method creation, using drag-and-drop phases, allows rapid generation and modification of any method outline according to user protocol requirements. Different aspects of the NGC System setup process are easily accessible from one location.

The method template is constructed based on the method phases, which are compiled in a logical workflow. A prepopulated column library with key column information, including column dimensions, maximum pressure ratings, and recommended flow rates, minimizes the risk of overpressuring and damaging a column. In addition, custom user-defined columns can easily be added to the column library.

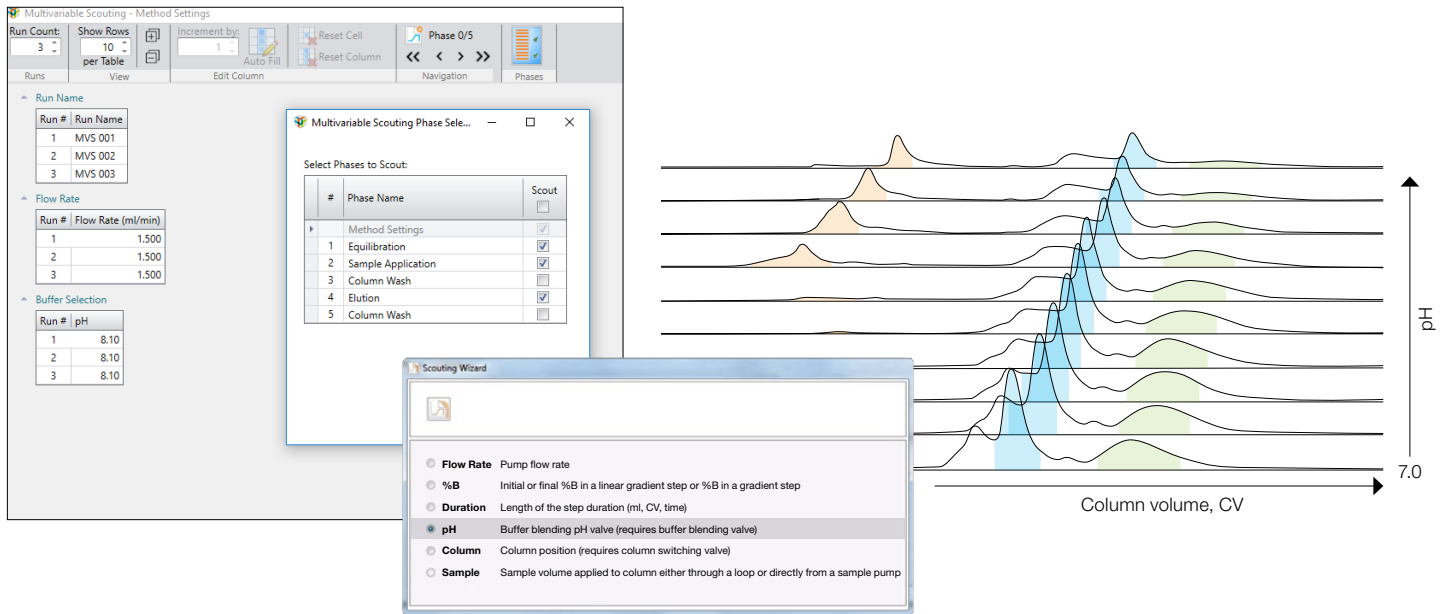
The screenshot displays the ChromLab software interface for method development. Key components include:

- Open Template Dialog:** Shows a list of techniques grouped by functional phase (e.g., Affinity, Anion Exchange, Cation Exchange, Chromatofocusing, Desalting, Hydrophobic Interaction (HI), Mixed Mode, Multicolumn Sequential, Multicolumn Tandem, Reverse Phase (RP), Size Exclusion, System Test). A graph below shows a gradient profile of %B vs Volume (CV).
- Fluidic Scheme Selector:** Displays various fluidic schemes, including 'NGC Discover Pro' which is highlighted.
- Main Method Editor:** Shows a graphical representation of the fluidic system with components like pumps, valves, columns, UV detectors, and a pH sensor.
- Method Settings Panel:**
 - Column Selection:** Shows 'Single Column' selected with 'Bypass' position and 'Anion Exchange' technique. The selected column is 'ENnich Q, 10/100 mm'.
 - Fraction Collection:** Shows 'NGC FC' selected with 'Outlet Valve, and NGC FC (Rack: 13 mm)' device type and a flow rate of 4.000 ml/min.
 - Multi Wave UV-Vis Detector Settings:** Shows 4 wavelengths: 215 nm, 255 nm, 280 nm, and 495 nm.
- Add User Defined Column Dialog:** A form for defining a new column with fields for Column Name, Manufacturer, Technique (set to Affinity), Column Volume, Column Diameter, Column Bed Height, Max pre-column pressure, Max delta-column pressure, Recommended Flow Rate, Recommended Linear Flow Rate, Max Linear Flow Rate, Void Volume, Average Particle Diameter, Recommended pH Range, and Recommended Molecular Weight Range.
- Column Library:** A list of prepopulated columns from Bio-Rad, including ENnich Q, Foresight Nuvia Q, Foresight UNOsphere Q, Macro-Prep DEAE, UNO Q, and UNOsphere Q in various sizes and bed heights.

- Prepopulated with method templates conveniently grouped by technique
- Incorporates an interactive elution profile to aid in visualization

Method Optimization: Scouting

The Scouting Wizard in ChromLab Software helps determine optimal purification conditions in an automated, systematic manner. Scout one parameter at a time or multiple variables. In one method, screen up to 384 samples while scouting different sample volumes, columns, buffers, flow rates, or elution profiles. The buffer blending valve automates optimal buffer formation over a range of pH and salt concentrations using prepopulated buffer recipes, accelerating the method development process.



Automated Multidimensional Purification Techniques

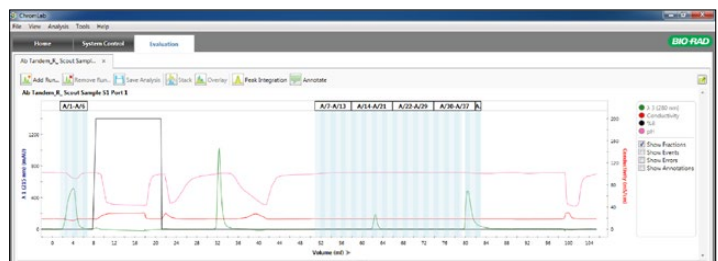
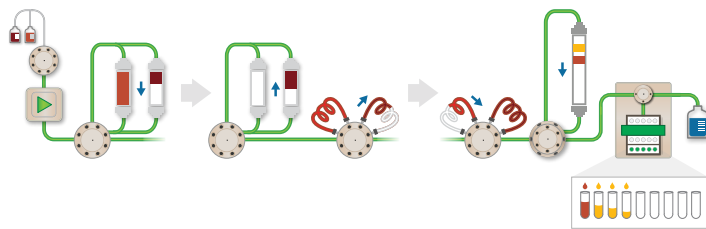
ChromLab Software also includes preprogrammed multistep purification templates that allow automation to minimize hands-on time and maximize efficiency and productivity. These templates can be edited to fit specific user requirements.



1 Load sample onto Protein A column

2 Elute polyclonal antibody (pAb) from Protein A column and capture onto sample loop

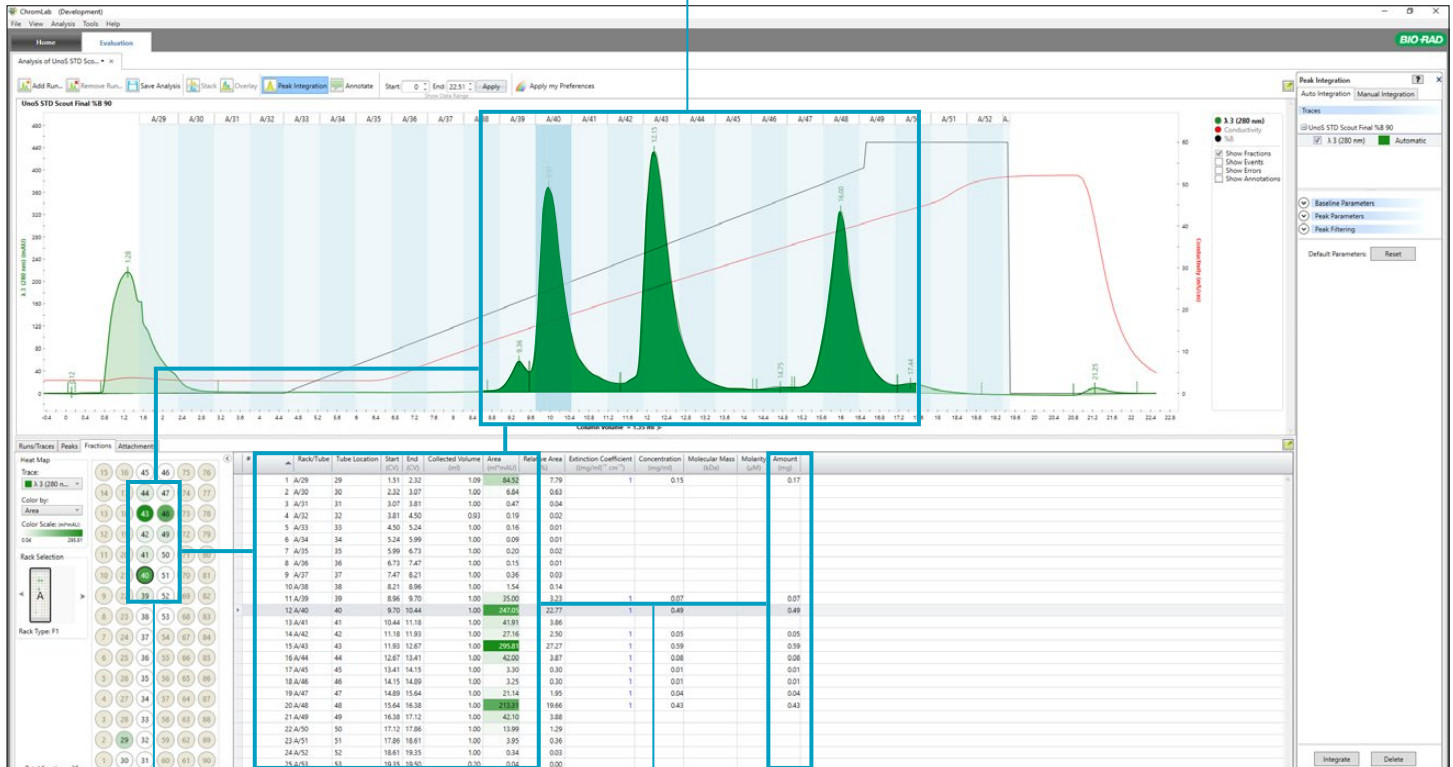
3 Sequentially inject pAb from sample loop onto the size exclusion column (SEC). The peaks show monomer and aggregate separation



Streamlined Data Analysis

ChromLab Software is based on intuitive functions and advanced tabular control to ensure seamless data integration analysis. Functions include peak integration, fraction heat maps to help locate proteins of interest, and protein quantitation calculations — a true one-click experience. Determine molecular weight of proteins when using a designated SEC calibration curve.

1 Single-click chromatogram overlay and peak integration allow effortless analysis and comparison of multiple run files*



2 Fraction heat maps highlight fractions containing proteins of interest, allowing researchers to confidently pool fractions

3 Instant data analysis and tabulation display protein concentration and purity of each fraction

* To ensure continuity, researchers can use ChromLab Software to import UNICORN 5 and 6 result files for analysis.

Innovative Solutions

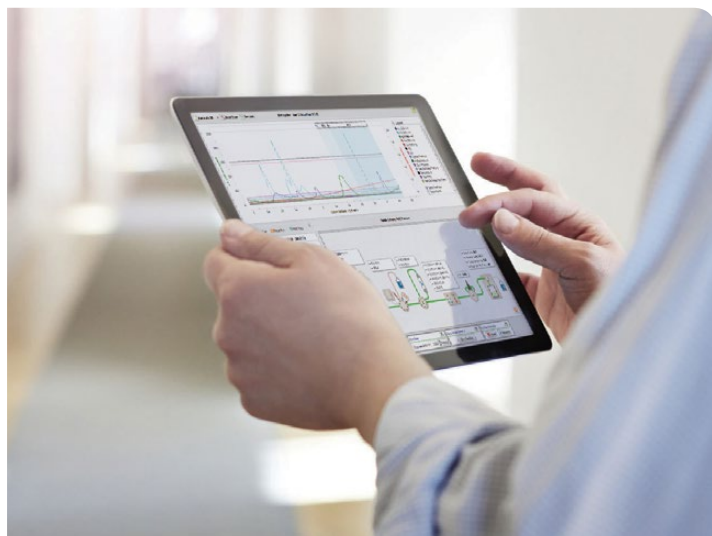
- Remote monitoring and control from any networked device for flexibility and peace of mind
- Email notifications upon run completion or midrun if something unexpected occurs
- Real-time monitoring of active fluidics path with Point-to-Plumb LEDs, system touch screen, and ChromLab Software
- Multiple system control saves valuable laboratory space; run multiple NGC Systems with 1 computer
- Column Performance Tests ensure reproducibility and monitor performance
- Easy and accurate documentation with Method and Run Reports
- All relevant data can be kept together by attaching files to run, including gel documentation

Stringent Standards for IT and Regulatory Requirements

- Security compliance
- U.S. FDA 21 CFR Part 11 compliance
- Installation qualification/operational qualification (IQ/OQ)
- Microsoft SQL database
- User, group, and NGC System management

License-Controlled Central Database

In addition to multiple system control, the User Management Edition enables ChromLab users to share data on multiple computers, with other users, and from different NGC Systems. While all connected computers can view the chromatogram and fluidic scheme of the active system, only one computer controls the system. Methods, runs, and analyses are saved to the shared ChromLab database. User access levels can be set to ensure data integrity.



Ordering Information

Catalog #	Description
12009390	ChromLab Software, Standard Edition , 1 license
7886001	ChromLab Software, Security Edition , 1 license
7886003	ChromLab Software, Security Edition , 3 licenses
7886005	ChromLab Software, Security Edition , 5 licenses
17000099	ChromLab Software, User Management Edition , 1 license
17000098	ChromLab Software, User Management Edition , 3 licenses
17000097	ChromLab Software, User Management Edition , 5 licenses

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