NGC Chromatography Systems for Protein Purification

The Standard in Automation and Reliability for Drug Discovery and Development

Integrating Flexibility and Scalability

From small-scale purification projects supporting

- downstream assays in target identification and validation
- lead discovery and optimization
- preclinical research

...to process development/ early scale-up initiatives supporting

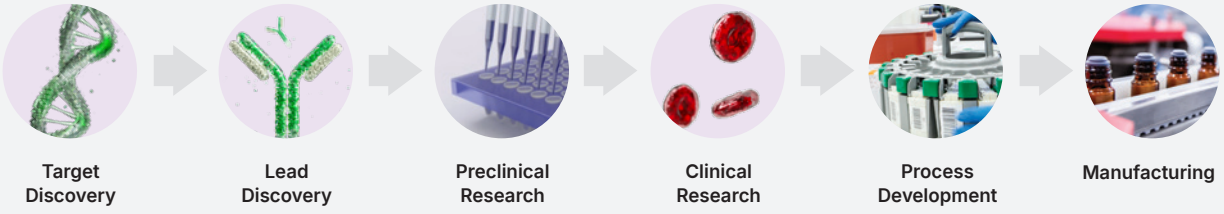
- clinical research
- manufacturing operations
- quality control (QC) procedures

NGC Chromatography System
with optional NGC Fraction Collector

- **Reliable**
- **Flexible**
- **Secure**
- **Robust**
- **Scalable**
- **Automated**
- **Innovative**

Providing Complete Support

Designed to Support Protein Purification Across All Stages of Drug Discovery and Development



Target Discovery | Lead Discovery | Preclinical Research | Clinical Research | Process Development | Manufacturing

NGC Quest Plus System | NGC Discover System | NGC Discover Pro System

All systems work with industry-leading Bio-Rad columns and resins.

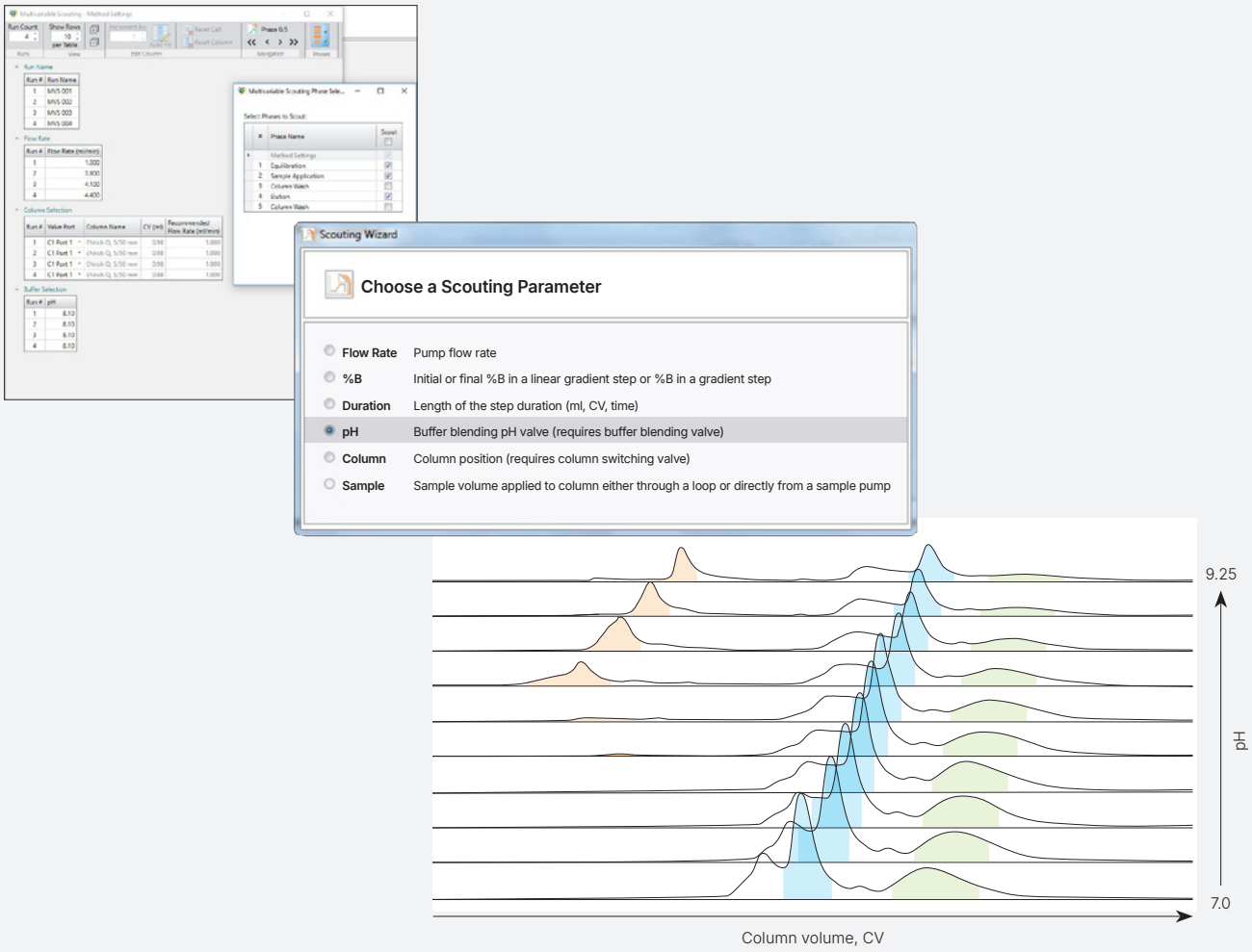
Downstream Assays

Structure | Function | Activity

Accelerating Time To Results

Faster Method Optimization Using Automation When Scouting

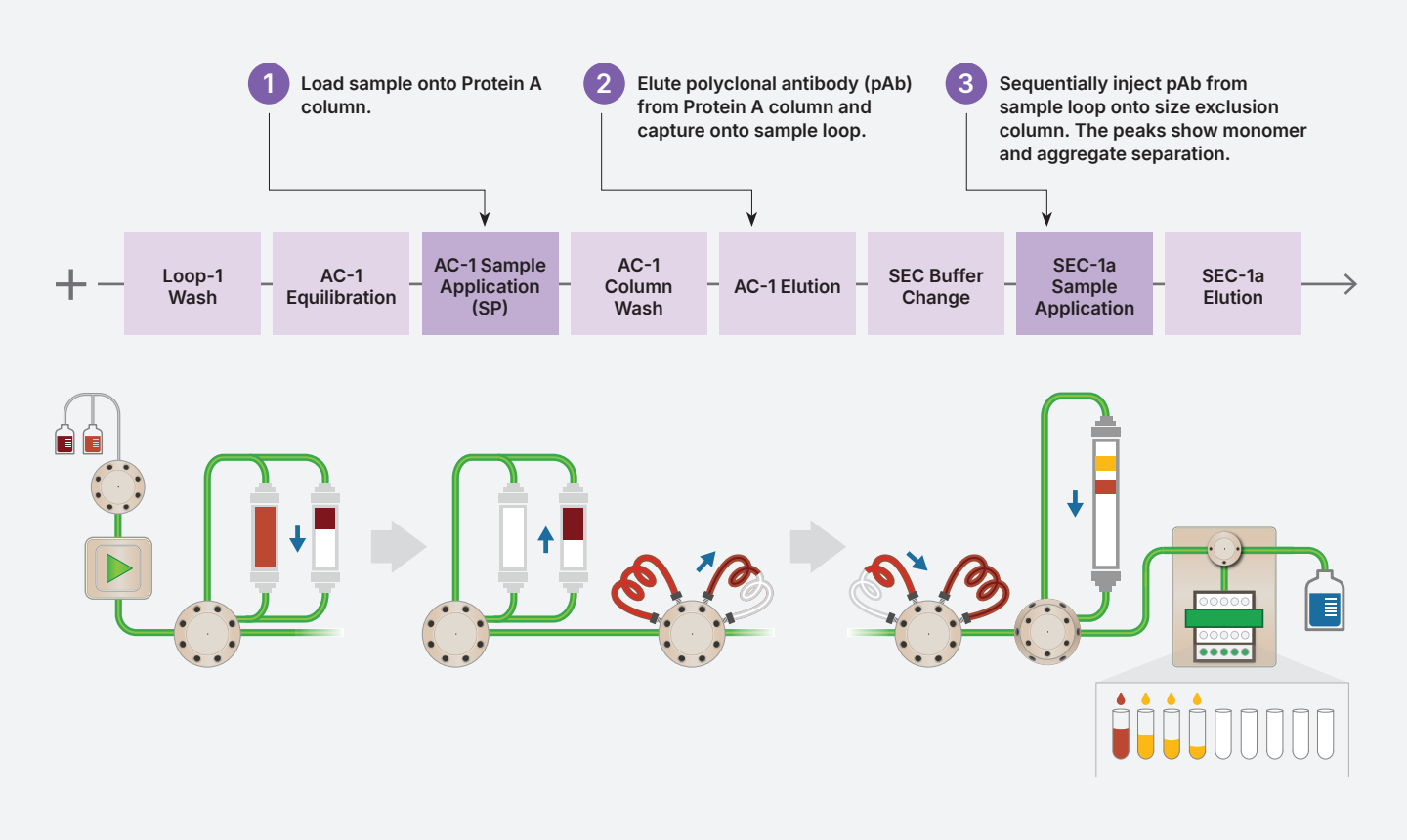
Optimal purification conditions can be determined in an automated manner using scouting features. Focus on one parameter at a time with the Scouting Wizard or evaluate multiple conditions using the Multivariable Scouting (MVS) feature. MVS simplifies the evaluation of multiple conditions provided by design of experiment statistical software. The buffer blending valve automates optimal buffer formation to further accelerate your method development process



Improved Efficiency and Reproducibility in Multidimensional (Multi-D) Purifications

Multi-D purification templates offer optimal efficiency for the tandem or sequential purification of multiple samples. Orthogonal techniques, such as affinity followed by size exclusion chromatography (SEC), provide unattended two-step processing without the risk of sample loss or operator error.

To learn more about Multi-D purifications, read the application note (bulletin 6725) or watch the webinar.



Simple, easy-to-follow method template, which can be optimized to fit your chromatography needs.

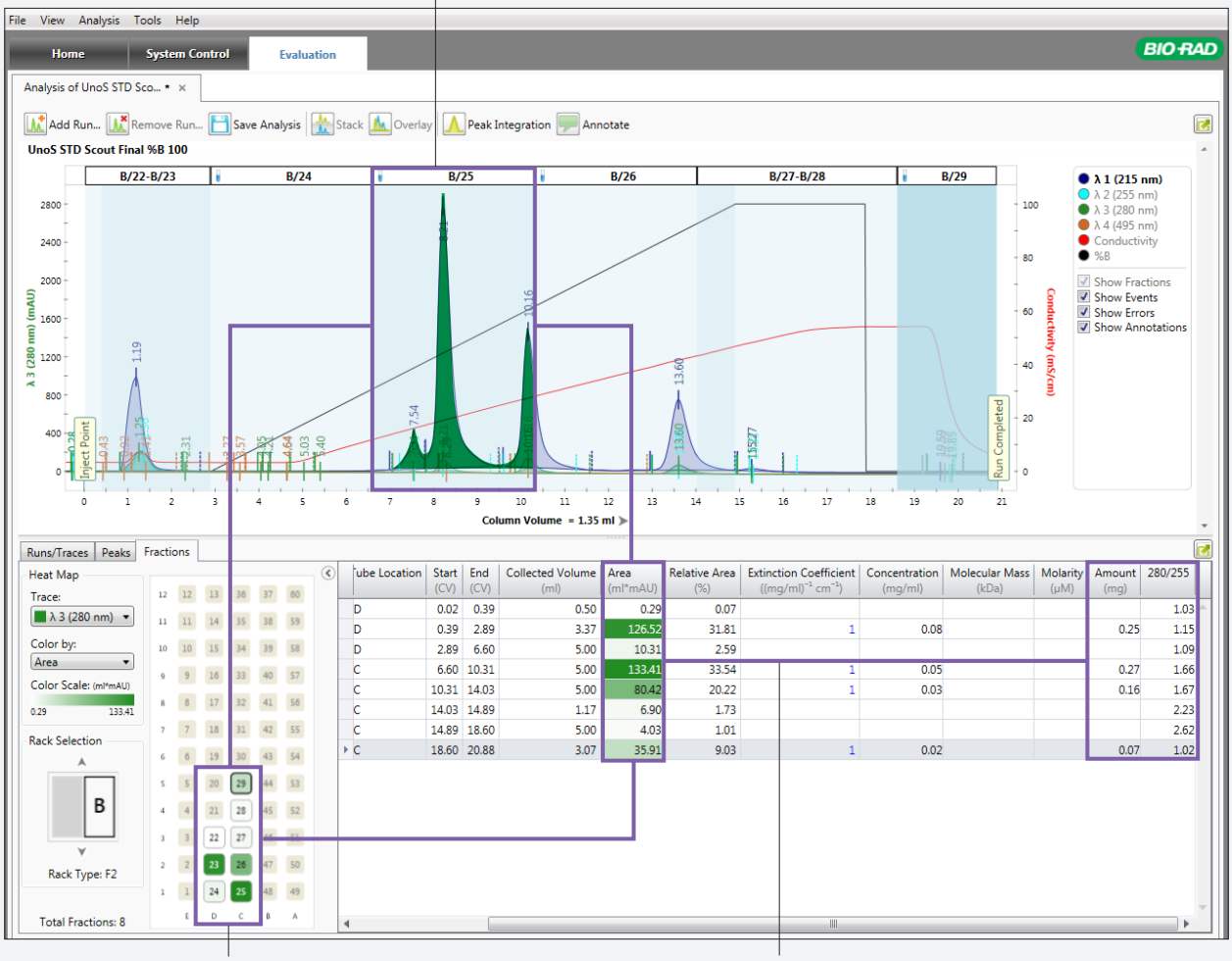
Streamlining Data Analysis

Unique ChromLab Software Tools for Faster Analysis

Data analysis has traditionally been viewed as a bottleneck, being both complicated and time-consuming. ChromLab Software streamlines data processing by providing one-click peak detection and integration, rapid creation of trace comparisons between multiple chromatograms, and customizable chromatogram layouts with a variety of viewing and data analysis options.

What Sets Us Apart

1 **Single-click chromatogram overlay and peak integration allow for 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 result files for analysis.

Ensuring Consistency, Robustness, and Reliability

Our Innovative Solution

Pharma and biotech customer-centric product development delivers ideal solutions that address your needs.

- Remote monitoring and control from any networked device for flexibility and peace of mind
- Email notifications upon run completion or mid-run if something unexpected occurs
- Real-time monitoring of active fluidics path with Point-to-Plumb LEDs, system touch screen, and ChromLab Software
- Centralized database with different levels of user access or increased traceability and security
- Multi-instrument control from a single computer

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

Rigorous Testing during Development

The entire fluid path in the NGC Systems is constructed with PEEK Tubing, the gold standard for chromatography applications due to its robustness, biocompatibility, and chemical inertness. The system will remain corrosion- and contamination-free with routine cleaning and maintenance.

Every NGC Chromatography System is built in our ISO 13485–accredited manufacturing facility and undergoes 9 hours of QC testing before being carefully packed and shipped.

50,000
VALVE ACTUATIONS
With no peak broadening or pressure fluctuations.

3,000,000
CONTINUAL CYCLES
Reproducibly formulating buffers under the most rigorous conditions over and over again.

10,000,000
PISTON STROKES
Equivalent to running continually 8 hours a day, 5 days a week, for 9 months.

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Ordering Information

Discovery

Catalog #	Description
NGC Quest Chromatography Systems For the all-purpose purification of biomolecules:	
7880003	**NGC Quest 10 Plus System**
7880004	**NGC Quest 100 Plus System**
NGC Scout Chromatography Systems For rapid scouting of proteins, peptides, and nucleic acids:	
7880007	**NGC Scout 10 Plus System**
7880008	**NGC Scout 100 Plus System**

Visit **bio-rad.com/chromatography** to explore chromatography resins, media, and columns.

Development and Scale-Up

Catalog #	Description
NGC Discover Chromatography Systems For method development:	
7880009	**NGC Discover 10 System**
7880011	**NGC Discover 10 Pro System**
7880010	**NGC Discover 100 System**
7880012	**NGC Discover 100 Pro System**

Visit **bio-rad.com/process** to view our process- and manufacturing-scale resins.

NGC System Modules and Accessories

System Pumps

7884002	**NGC F10 Pump Module**, pkg of 1, includes 10 ml/min system pump kit with necessary tubing and fittings, for creating buffer gradients; for use with the buffer blending valve to generate flow rates of up to 20 ml/min
7884003	**NGC F100 Pump Module**, pkg of 1, includes 100 ml/min system pump kit with necessary tubing and fittings, for creating buffer gradients; for use with the buffer blending valve to generate flow rates of up to 200 ml/min

Sample Pump

7884004	**NGC Sample Pump Module**, pkg of 1, includes 100 ml/min sample pump kit with necessary tubing and fittings, for automated large-volume sample application via sample inject valve

Detectors

12010343	**NGC Multi-Wavelength Detector II Module**, pkg of 1, includes UV/Vis and conductivity detector kit with necessary tubing and fittings, for simultaneous 4-wavelength monitoring of elution fractions between 190 and 800 nm and salt gradient generation
12012533	**NGC UV Flow Cell (2 mm)**, preparative
12012531	**NGC UV Flow Cell (10 mm)**, analytical
12012532	**NGC UV Flow Cell (5 mm)**, included with all 10 ml/min and 100 ml/min systems
7884011	**NGC pH Valve Module**, pkg of 1, kit includes the pH valve kit, pH probe, tubing, and fittings, for accurate inline pH measurement

Valves

7884010	**NGC Buffer Blending Valve Module**, pkg of 1, kit includes necessary tubing and fittings for inline buffer preparation and generating pH gradients for quick pH scouting, or for generating flow rates of up to 200 ml/min
7884006	**NGC Inlet Valve Module**, pkg of 1, kit includes necessary tubing and fittings for automated switching between multiple buffers and samples during method development
7884012	**NGC Column Switching Valve Module (10 ml)**, kit includes the necessary tubing and fittings to accommodate the most common column types, holds 5 columns; for use with F10 systems for quick column scouting and reverse flow applications
7884026	**NGC Column Switching Valve Module (100 ml)**, kit includes the necessary tubing and fittings to accommodate the most common column types, holds 5 columns; for use with F100 systems for quick column scouting and reverse flow applications
7884013	**NGC Outlet Valve Module**, pkg of 1, kit includes necessary tubing and fittings for automated fraction collection of large-volume fractions with up to 12 vessels
7884016	**NGC Signal Import Module**, pkg of 1, enables analog to digital signal conversion and connection to third-party autosamplers and detectors

Tubing

7885171	**NGC High Flow Tubing Kit**, includes necessary tubing and fittings for operating at flow rates up to 200 ml/min

Air Sensors

7885017	**NGC Air Sensor Module**, pkg of 1, kit includes 2 large-bore air sensors for detection of end of buffer and sample to protect against air entering pumps and columns; supports up to 4 large- and small-bore air sensors
7885018	**NGC Air Sensor Extension Module**, pkg of 1, connects to the base air sensor module to support 4 additional air sensors; does not include any air sensors, optional part
7885020	**NGC Small Air Sensor**, pkg of 1, includes air sensor to detect air in small-diameter PEEK Tubing
7885021	**NGC Large Air Sensor**, pkg of 1, includes air sensor to detect air in large-diameter PTFE tubing

Fraction Collectors

17002070	**NGC Fraction Collector**, 100/240 V, fraction collector compatible with all NGC Systems, includes power cord, rack set (two 13 mm tube racks), tubing, union
7410002	**BioFrac Fraction Collector**, 100/240 V, fraction collector compatible with all NGC Systems, includes power cord, rack set F1 (2 x flatpack, 13 mm), BioFrac Diverter Valve, PEEK Tubing, standard dropper head

Visit **bio-rad.com/NGC** for more information.

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