

## NGC™ Chromatography Systems for Protein Purification

The new standard in automation and reliability for drug discovery and development



## INTEGRATING FLEXIBILITY AND SCALABILITY

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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

Reliable

Flexible

Secure

Robust

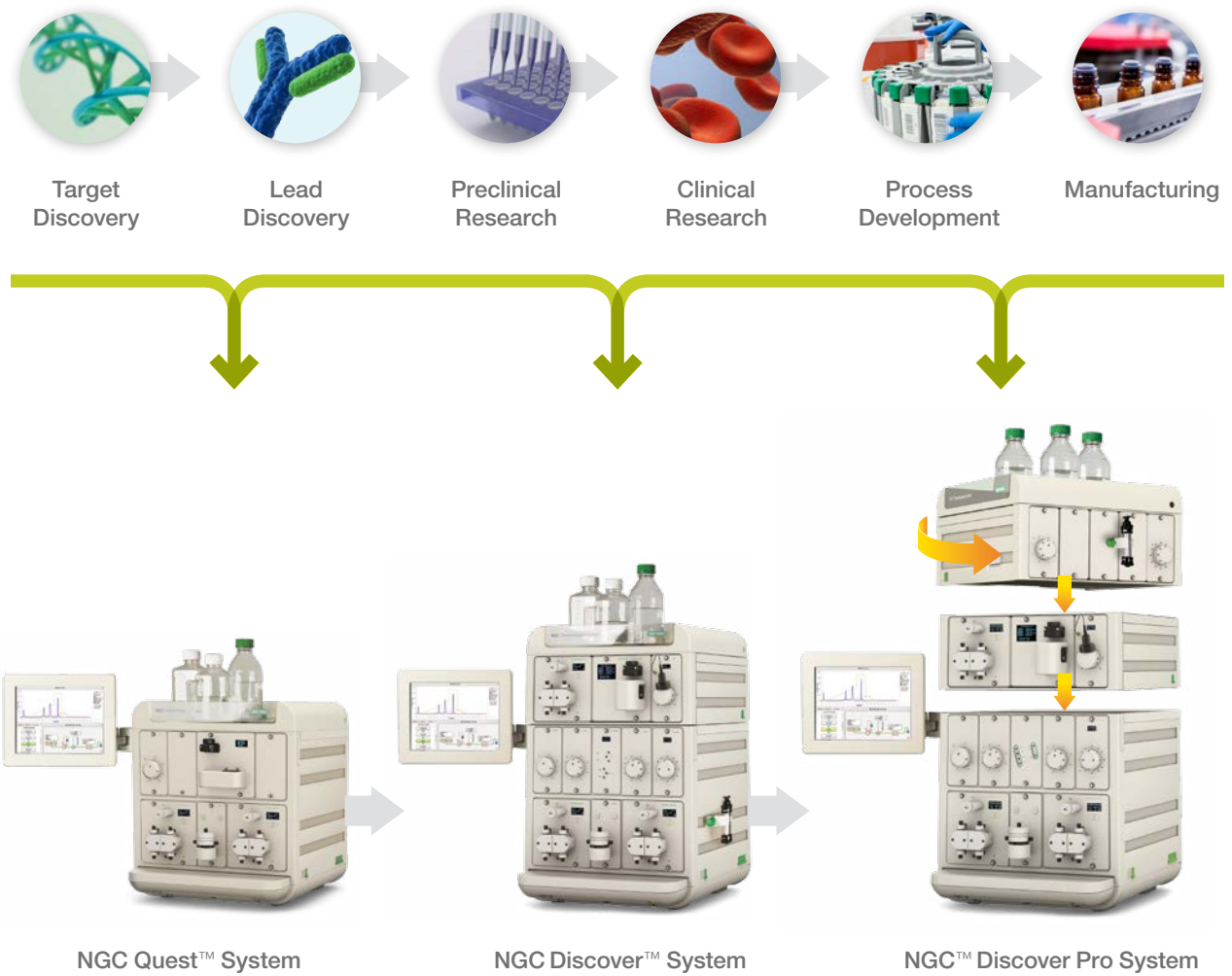
Scalable

Automated

Innovative

# PROVIDING COMPLETE SUPPORT

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



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

Downstream Assays

Structure

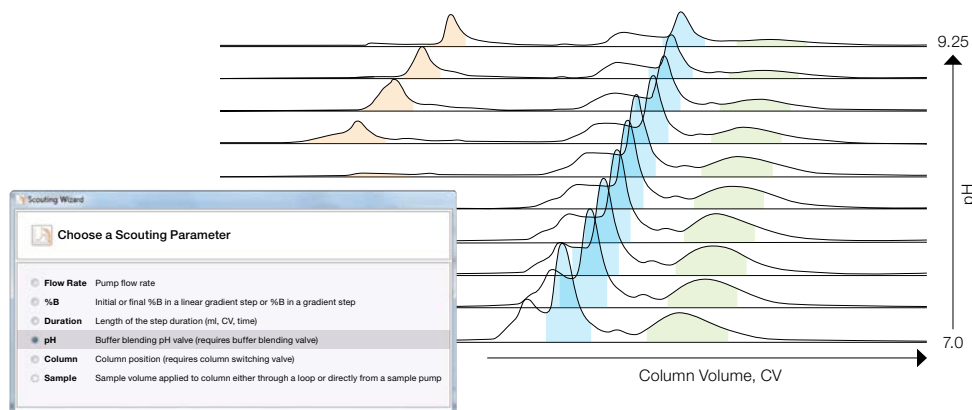
Function

Activity

# ACCELERATING TIME TO RESULTS

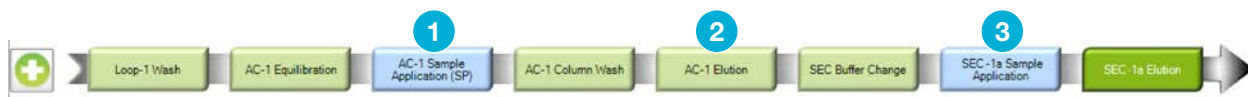
## Faster Method Optimization Using Automation When Scouting

Optimal purification conditions can be determined in an automated systematic manner using the Scouting Wizard in ChromLab™ Software. The buffer blending valve automates optimal buffer formation over a range of pH and salt concentrations using prepopulated buffer recipes. Read the application note to [learn more about our automated scouting feature \(bulletin 6530\)](#).



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

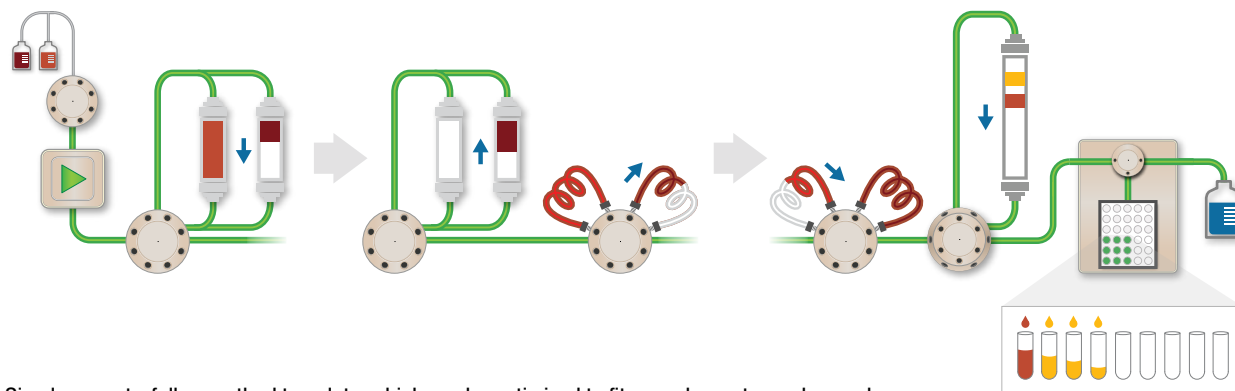
Multi-D purification templates offer optimal efficiency for the tandem or sequential purification of multiple samples. Orthogonal techniques, such as affinity followed by size exclusion chromatography (SEC), provide unattended two-step processing without the risk of sample loss or operator error.



**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. The peaks show monomer and aggregate separation.



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

To learn more about Multi-D purifications, read the [application note \(bulletin 6725\)](#) and [watch the webinar](#).

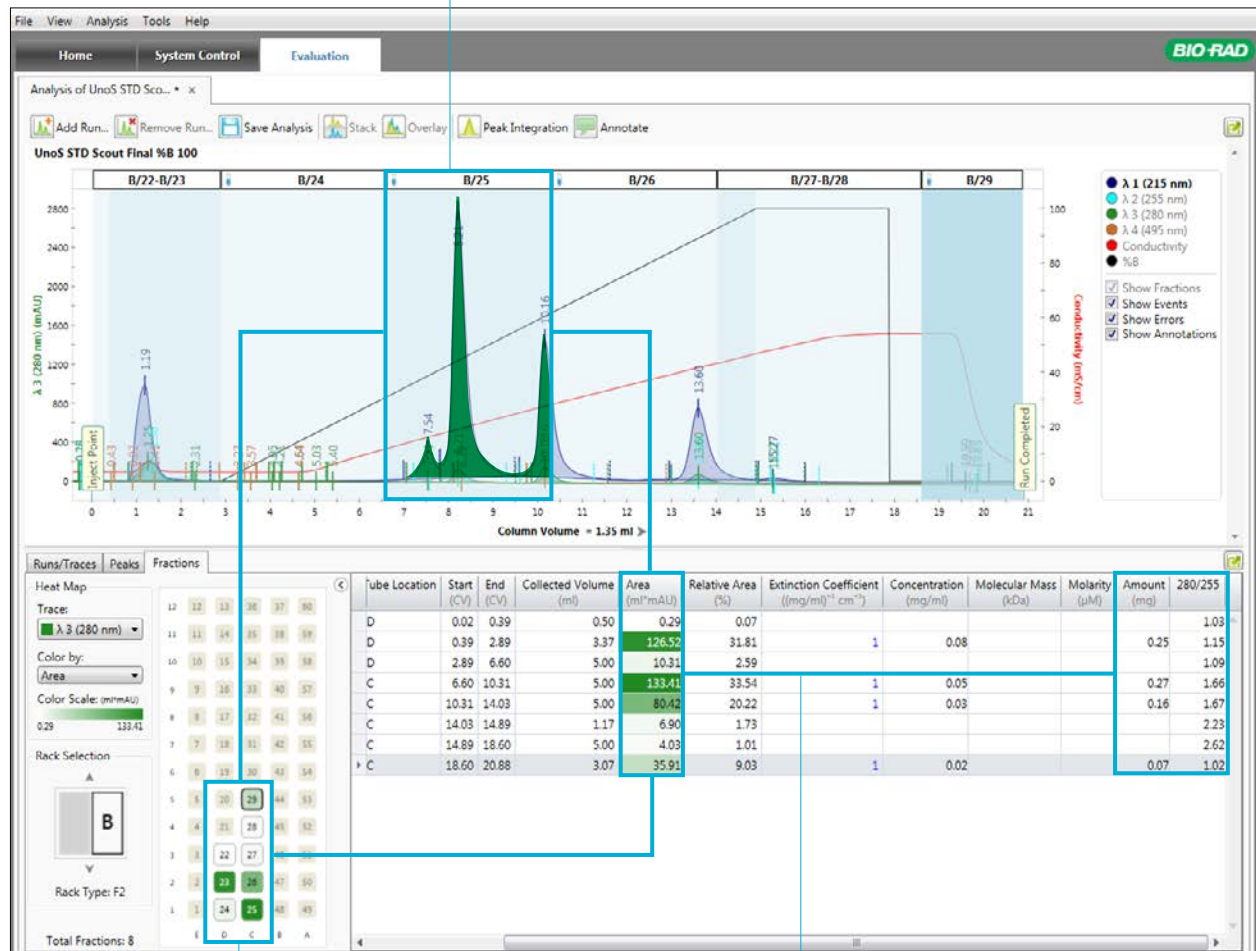
# STREAMLINING DATA ANALYSIS

## 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 5 and 6 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 touchscreen, and ChromLab Software
- Centralized database with different levels of user access for 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 9001-accredited manufacturing facility and undergoes nine 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 for eight hours a day, five days a week for nine months.



## Ordering Information

### Discovery

#### NGC™ Quest Chromatography Systems

For the all-purpose purification of biomolecules

7880001	NGC Quest 10 System
7880003	NGC Quest 10 Plus System
7880002	NGC Quest 100 System
7880004	NGC Quest 100 Plus System

#### NGC Scout™ Chromatography Systems

For rapid scouting of proteins, peptides, and nucleic acids

7880005	NGC™ Scout 10 System
7880007	NGC Scout 10 Plus System
7880006	NGC Scout 100 System
7880008	NGC Scout 100 Plus System

Visit [bio-rad.com/resin](http://bio-rad.com/resin) to view our lab-scale resins and [bio-rad.com/column](http://bio-rad.com/column) to view our lab-scale columns.

### Development and Scale-Up

#### 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](http://bio-rad.com/process) to view our process- and manufacturing-scale resins.

CONFIGURE YOUR NGC SYSTEM  
at [bio-rad.com/DesignYourNGC](http://bio-rad.com/DesignYourNGC)

## NGC System Modules and Accessories

### System Pumps

7884002	<b>NGC F10 Pump Module</b> , 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	<b>NGC F100 Pump Module</b> , 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	<b>NGC Sample Pump 100 Module</b> , 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
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### Detectors

7884008	<b>NGC Single-Wavelength Detector Module</b> , pkg of 1, includes UV/conductivity detector kit with necessary tubing and fittings, for nucleotide and protein detection, salt gradient generation
7884009	<b>NGC Multi-Wavelength Detector Module</b> , pkg of 1, includes UV/Vis and conductivity detector kit with necessary tubing and fittings, for simultaneous four-wavelength monitoring of elution fractions between 190–800 nm and salt gradient generation
7885022	<b>NGC UV Flow Cell 2 mm</b> , preparative
7885023	<b>NGC UV Flow Cell 10 mm</b> , analytical
7885024	<b>NGC UV Flow Cell 5 mm</b> , included with all 10 ml/min and 100 ml/min systems

### Valves

7884010	<b>NGC Buffer Blending Valve Module</b> , pkg of 1, kit includes necessary tubing and fittings, for inline buffer preparation and generating pH gradients for quick pH scouting
7884006	<b>NGC Inlet Valve Module</b> , pkg of 1, kit includes necessary tubing and fittings, for automated switching between multiple buffers and samples during method development
7884012	<b>NGC Column Switching Valve Module (10 ml)</b> , 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	<b>NGC Column Switching Valve Module (100 ml)</b> , 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	<b>NGC Outlet Valve Module</b> , pkg of 1, kit includes necessary tubing and fittings for automated fraction collection of large-volume fractions with up to 12 vessels
7884011	<b>NGC pH Valve Module</b> , pkg of 1, kit includes the pH valve kit, pH probe, tubing, and fittings, for accurate inline pH measurement

### Air Sensor

7885017	<b>NGC Air Sensor Module</b> , 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	<b>NGC Air Sensor Extension Module</b> , 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	<b>NGC Small Air Sensor</b> , pkg of 1, includes air sensor to detect air in small-diameter PEEK Tubing
7885021	<b>NGC Large Air Sensor</b> , pkg of 1, includes air sensor to detect air in large-diameter PTFE tubing
7885019	<b>NGC Air Sensor Extension Cable</b> , pkg of 1, for placement of air sensors outside air sensor module

### Fraction Collector and Autosampler

7410002	<b>BioFrac™ Fraction Collector</b> , 100/240 V, fraction collector compatible with all NGC Systems, includes power cord, rack set F1 (2 x flatpack, 13 mm), BioFrac Diverter Valve, fittings kit
7885011	<b>C-96 Autosampler</b> , 110/240 V, includes standard 84+3 vial tray (1.5 and 10 ml), control cable set to connect with NGC System, 1 ml syringe, 2 ml sample loop, also includes #7605014, #7605026, #7600604, #7884016, and #7885013; compatible with all NGC Systems
7885012	<b>C-96 Autosampler with cooling</b> , 110/240 V, includes Peltier cooling, standard 84+3 vial tray (1.5 and 10 ml), control cable set to connect with NGC System, 1 ml syringe, 2 ml sample loop, also includes #7605014, #7605026, #7600604, #7884016, and #7885013; compatible with all NGC Systems

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# DESIGNED BY YOU BUILT BY BIO-RAD

**BIO-RAD**



Available on the  
**App Store**



Download the NGC System Tour on the App Store  
and use this Augmented Reality (AR) Target to visualize  
the NGC System in your lab.

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Life Science  
Group

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