



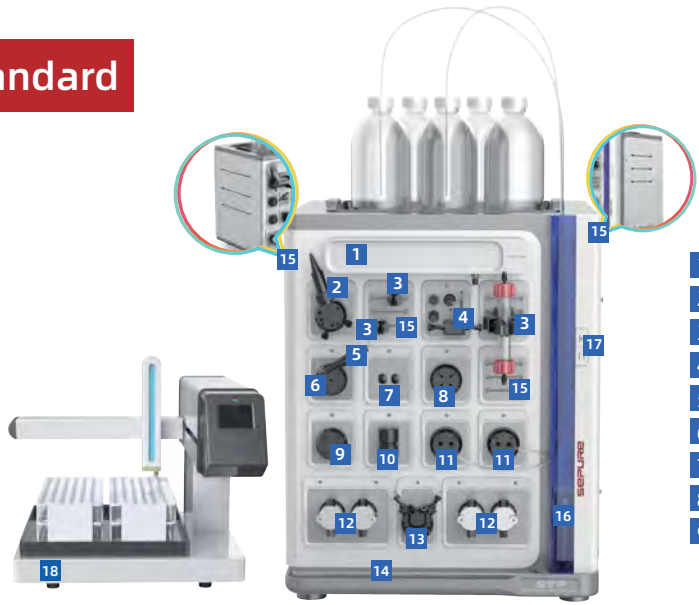
赛谱仪器
SEPURE INSTRUMENTS

TruPurity™ FPLC System

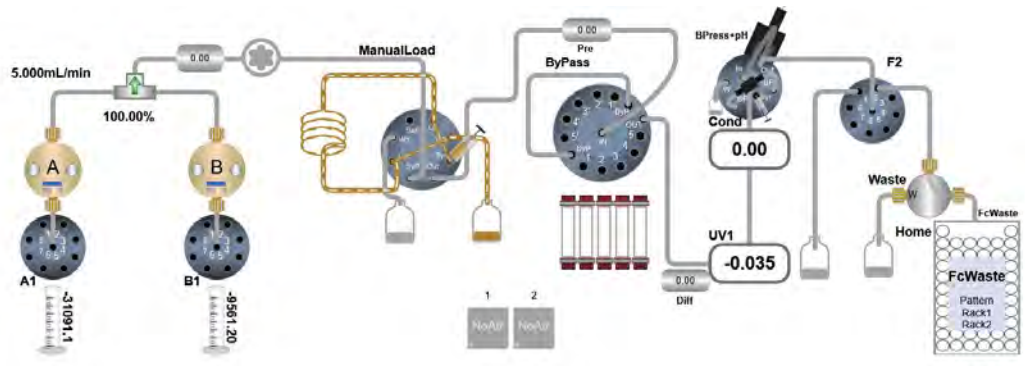
protein | antibody | vaccine | polypeptide | virus



STP Standard



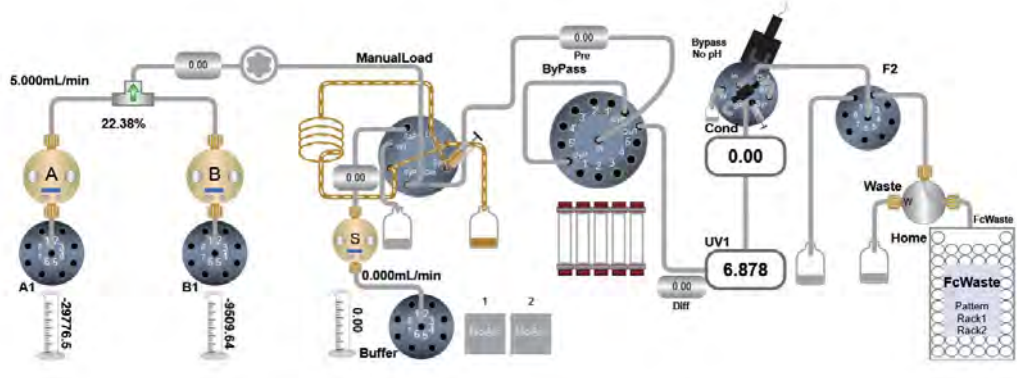
- 1 UV detector
- 2 pH detector
- 3 Column clip
- 4 Cond/temp detector
- 5 Reverse-pressure valve
- 6 Collection valve
- 7 Column pressure detector
- 8 Column position valve
- 9 Sample injection valve
- 10 Dynamic mixer
- 11 Inlet valve A, B
- 12 System pump
- 13 System pressure detector
- 14 Tray
- 15 Guide rail
- 16 Cord organizer
- 17 Pause/continue button
- 18 Fraction collector



STP Extended



- 1 UV detector
- 2 pH detector
- 3 Column clip
- 4 Cond/temp detector
- 5 Reverse-pressure valve
- 6 Collection valve
- 7 Column pressure detector
- 8 Column position valve
- 9 Sample injection valve
- 10 Dynamic mixer
- 11 Inlet valve A, B
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- 18 Fraction collector
- 19 Sample pump

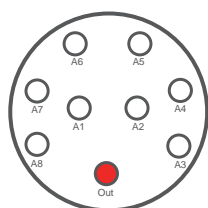


Feature Highlights

Pump	Low pulsation	High precision	Dual piston pump for smooth operations
Flow path material	PEEK ensuring biocompatibility	Optimized flow path Minimized dead volume	Stable operation at highly salty fluids
Buffer selection valve	pump A (large size valve head, 8 inlets)	pump B (large size valve head, 8 inlets)	Integrated air bubble sensor with sensitivity and reliability
In-line filter	Friendly design for easy filter membrane maintenance		
Multi-function injection valve	Sampleloop	Superloop	Sample pump
Five-column valve	Single valve (large-size valve head)	Five columns supported	Forward and reverse flush
Detector	Multiple UV choices	Pressure and pH bypass control	Cond/temp integrated design for sensitivity and accuracy
Collection valve	Single collection valve with 8 ports	6 ports with FC	Variety collection modes available
DOE	Powerful PURfect® software with built-in DOE function allowing optimized outcomes to be achieved with minimum experimental runs		

Buffer inlet valve ¹¹

The buffer inlet valve provides up to 16 inlet channels: A1-A8, B1-B8, allowing for automatic switching of buffer solutions, making it suitable for automated purification processes. Each buffer inlet valve is equipped with an integrated air sensor that detects bubbles. When bubbles are detected, the system can pause and perform flushing operations, helping to eliminate air from the flow path for the next experimental steps.



"large valve head" design,

enables easy tubing access

Air bubble sensor is integrated in buffer valve for simultaneous bubble detection

System pump ¹²

The STP protein purification system utilizes a high-precision binary piston pump with a pump head made of PEEK material, known for its excellent biocompatibility.

The pump head has a self-rinsing function, removing any buffer salts that may be precipitated, thus keeping the piston clean. The optimized pump design ensures outstanding low pulsation, flow accuracy and repeatability for chromatography and maintaining stability throughout the purification process.

	STP 030	STP 100
Suggested scale	mg	g
Max operating pressure	27 Mpa	10 Mpa
System pump max flow rate	36mL/min	100mL/min
Max flow rate for column packing	72mL/min	200mL/min

The system pump supports constant pressure mode, catering to various customer purification requirements. It allows for the autonomous packing of chromatography columns using the constant pressure mode.

Dynamic mixer ¹⁰

The fully automated dynamic mixing system ensures uniformity during the gradient mixing of Buffer solutions under low pressure conditions. The mixing chamber volume is as low as 0.6mL, (2mL for the STP100 series). The software control allows for various gradient modes, such as isocratic, linear, and step gradients. During sample injection by the system pump, the dynamic mixer can be turned off to prevent shear forces from damaging the sample.

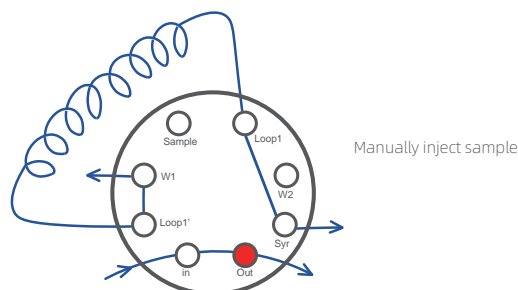
	STP 030	STP 100
Mixer volume(standard)	0.6mL	2mL
Mixer volume(optional)	2mL	5mL

Injection valve ⁹

Both STP 030 and STP 100 injection valves are compatible with multiple injection methods.

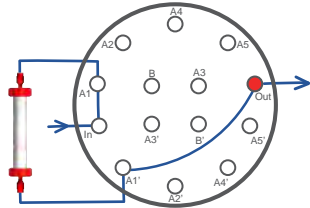
- samples can be manually loaded into sample loops or Superloops using syringes,
- or loaded into sample loops and Superloops using an optional sample pump,
- or directly injected into chromatography columns using the optional sample pump.

The valve design allows for seamless switching between different injection methods without the need to change the tubing connections. The STP system comes standard with a 1mL sample loop.



Column valve ⁸

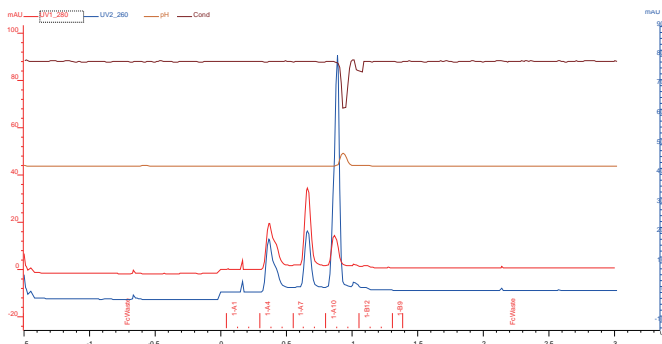
The innovative column valve enables the selection of up to five chromatography columns and comes with integrated bypass and reverse flush functions. The ability to connect multiple chromatography columns minimizes manual intervention and further reduces the risk of introducing air into the chromatography columns.



UV detector ¹

The STP system utilizes high performance DAD(Diode Array Detector) devices, which can simultaneously provide signal outputs for multiple wavelengths. This allows for real-time monitoring of the separation of various components in the chromatographic column. The STP system offers either fixed dual-wavelength UV detectors or variable multi-wavelength UV and visible light detectors, known for their high sensitivity and wide linear range. Additionally, they can be used in conjunction with other detectors.

The fixed dual-wavelength UV detector provides two wavelength options, 280 and 260 nm. allowing for real-time online identification of target components. The variable multi-wavelength UV and visible light detector are used for multi-wavelength detection in the range of 200-800 nm. It can simultaneously monitor up to four wavelengths.



Instrument: STP 100

Column: Superdex 200 Increase 10/300 GL

Buffers: 10mM PB+140mM NaCl pH7.4

Flow Rate: 0.75 mL/min

Pressure: 1.6Mpa

Samples: (1) BSA; (2) Cytochrome C; (3) VB12

Injection Volume: 0.4mL

Detection: UV @280nm

Cond/temp detector ⁴

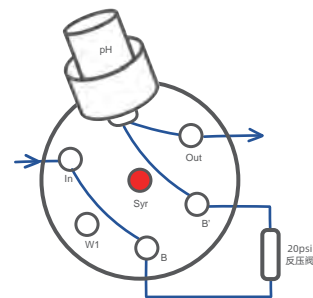
The integrated conductivity monitor is designed with high sensitivity and has a wide measurement range of 0.01 mS/cm to 999.99 mS/cm, meeting the demands of various chromatographic processes, especially hydrophobic experiments and ion exchange chromatography. It performs real-time automatic detection and provides temperature compensation.

The system also offers real-time temperature detection and features temperature compensation for both conductivity and pH measurements, ensuring the accuracy of experimental data.

pH detector ²

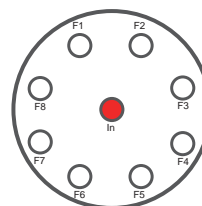
The advanced pH valve supports multiple flow scheme modes: bypass, pH, pressure, pressure & pH and waste positions. It can provide real time pH monitoring accurately. And the temperature compensation function further enhances the accuracy of experimental data.

- Under low flow rate conditions, you can choose the pressure & pH to prevent the generation of bubbles during operation.
- Under high flow rate conditions, you can only select the pH to reduce system pressure.
- During the CIP process, you can choose the bypass channel to avoid damage to the pH electrode from strong alkalis, thus prolonging its lifespan.
- Calibration and preservation of the pH probe can be easily done without disassembly.



Collection valve ⁶

The 8-port outlet valve can be used independently to support one waste outlet and collect seven components. Alternatively, it can be connected to fraction collectors for shared use, with six available outlets for collecting large-volume fractions.



"large valve head" design makes it easy for tubing connection access to allow for easy pipeline connection

Collection valve supports maximum 7 FCS

Optional Modules

Sample Pump Options:

The sample pump module is equipped with a sample pump, sample selection valve, and sample holder bracket, which can achieve continuous and automatic introduction of multiple sample. This module is suitable for method development involving multi-component process research and development, improving experimental efficiency. The sample pump supports a maximum flow rate of 100 mL/min for sample introduction. The sample selection valve is designed with a bubble detector integrated, supporting the application of up to 7 different samples. The application method can also be based on bubble sensor detection, avoiding sample loss and waste. The sample pump allows direct introduction of large volumes, eliminating the need for complicated steps and improving experimental efficiency. On the other hand, it can be used for indirect application into a sample loop or a superloop, meeting the demand for precise quantification and conducting linear experiments.

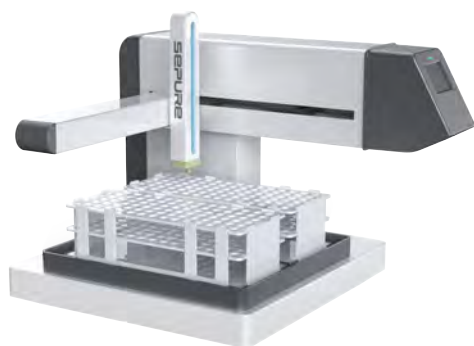


Fraction Collector

F25, the new generation fraction collector, utilizes RFID technology to automatically detect the type of collection racks and configure for the operations. It supports automatic program collection and manual collection, providing a flexible, high-capacity and secure solution.

The independent collection arm design prevents liquid splashing during the collection process, and the software includes a built-in delay volume to ensure precise positioning of each component during collection. The built-in collector calibration program facilitates easy maintenance.

The FC supports various collection containers, including 1.5mL, 5mL, 15mL, 50mL and 96-well plate modes. The collection modes are diverse, allowing for collection based on time, volume, threshold and slope to meet various collection needs.



PURfect P® software

- The brand-new PURfect P® software perfectly integrates DOE functionality. Via intelligent optimization, the DOE provides optimum experimental settings and results from minimum experimental runs.
- Developed independently with proprietary intellectual property, focusing on global customers;
- Compliant with FDA 21 CFR/GLP/GMP and other relevant regulations, meeting the pharmaceutical industry's requirements for data traceability and integrity.
- A powerful, advanced, and highly stable chromatographic data management system.
- Full-process LOGBOOK recording, with protection features such as pressure alarms, collection alarms, and bubble monitoring to safeguard the chromatographic column and samples in real-time.
- Data are automatically saved in real-time to prevent data loss due to unexpected power outages.
- Unique remote control capability, supporting smartphones, tablets, and Wi-Fi mode, allowing users to monitor ongoing experiments from their office area for convenient operations.



Instrument control

System control is used to execute and monitor the separation process, displaying all data during the separation process. The interactive flow path design allows for real-time monitoring and control. The interface includes four display panes: the chromatogram, running data, flow path diagram, and operation log.

Upon connection, users can double-click on pumps and various valves in the flow path diagram to manually control the instrument, or they can insert a set of commands into the list for execution. In the attribute dialog box, settings can be adjusted for the data acquisition area, status display area, and flow path diagram according to individual preferences and operating choices.

Method editor

The method editing adopts a modular design, covering method setup, system preparation, equilibrium, sample application, column flushing, elution, regeneration, CIP, and pause templates. Depending on actual needs, users can also edit and save templates by themselves. At the same time, the method editing program includes a column library, allowing direct selection of chromatography columns and intelligent programming, eliminating concerns about exceeding column capacity or packing pressure alarms. To create a new method in the method editing section, simply select the menu bar function "Scouting." This will enable a Scouting method, where relevant parameters can be adjusted, mainly for exploring different process options.

Result processing

The result processing interface allows for quick integration processing and column efficiency evaluation of completed data. For different sets of running data, a data comparison can be performed, facilitating the optimization of purification conditions for the next steps. Snapshots of the ongoing chromatograms can also be taken, enabling an assessment of the chromatogram processing status.

Report editing

Pre-set report templates make it easy to export experimental reports. Users can customize report formats according to their own needs, truly achieving flexibility in presenting report results.

Pre-packed column options

NSP carries a wide range of pre-packed column options suitable for purifying target proteins ranging from micrograms to hundreds of milligrams using various chromatographic techniques. These series include NmTRAP™, NmSCREEN™, NmPREP™, NmVALID™ Pro, and NmXK™ chromatography columns. In addition to pre-packed columns, you also have the option to use empty columns for packing chromatographic media.



For milligram-level purification

NmTrap™ 1 and 5 mL pre-packed columns have column bed sizes of 7.7x22mm and 16x25mm, respectively. They meet the rapid screening needs of various chromatographic media during protein, antibody, and other target molecule research and downstream separation and purification processes. Additionally, the innovative threaded tube end design makes them easy to use and provides a higher pressure tolerance limit (1MPa).



NmSCREEN™ 4.7 mL prepacked prepacakd column has a column bed size of 7.7x100mm. It is suitable for rapid chromatographic media screening and early-stage optimization of chromatographic processes in downstream separation and purification of proteins, antibodies, and other target molecules. The innovative threaded tube end design allows the use of specialized connectors, enabling higher column efficiency and designed specifically for method optimization, allowing for sequential use.



NmPREP™ 16/100 20mL and NmPREP™ 26/100 50mL chromatography empty columns have column bed sizes of 16X100mm and 26X100mm, respectively. They are suitable for first time scale-up of chromatographic processes, process validation, small-scale preparation, and desalting of purified samples during downstream separation and purification of proteins, antibodies, and other target molecules in the research phase.



The NmVALID™ Pro medium-pressure glass chromatography column has internal diameters of 8.0 mm, 11.0 mm, 16.0 mm, and 26.0 mm, making it ideal for early-stage process development, mid-stage process validation, packing material life-span verification, and troubleshooting during simultaneous production processes in chromatographic purification. The column tubes have lengths of 150 mm, 250 mm, 400 mm, and 650 mm, providing flexibility to assemble adjustable pistons at both ends (AA), one end (AF), or fixed at both ends (FF), enabling variations in column bed height. They can accommodate the pressure requirements for packing chromatographic media and the chromatographic purification process within a particle size range of 10 micrometers to 200 micrometers.

NmVALID™ Pro medium-pressure glass chromatography columns are essential tools for downstream chromatographic purification of various substances in the biopharmaceutical industry, including peptides, recombinant proteins, antibodies, vaccines, and other target molecules. They are considered one of the best chromatography column choices for chromatography purification professionals and laboratories.



For gram-level purification

NmXK™ chromatography empty columns are user-friendly and durable, designed for standard protein purification. The NmXK™ series offers high-quality jacketed glass chromatography empty columns with internal diameters of 16mm, 26mm, and 50mm, and column heights ranging from 200mm to 1000mm, providing a wide range of combinations with column bed volumes up to 2L. These columns meet the chromatographic purification needs of proteins, antibodies, and other target molecules for various purposes, including process optimization, process validation, and small-scale preparation.



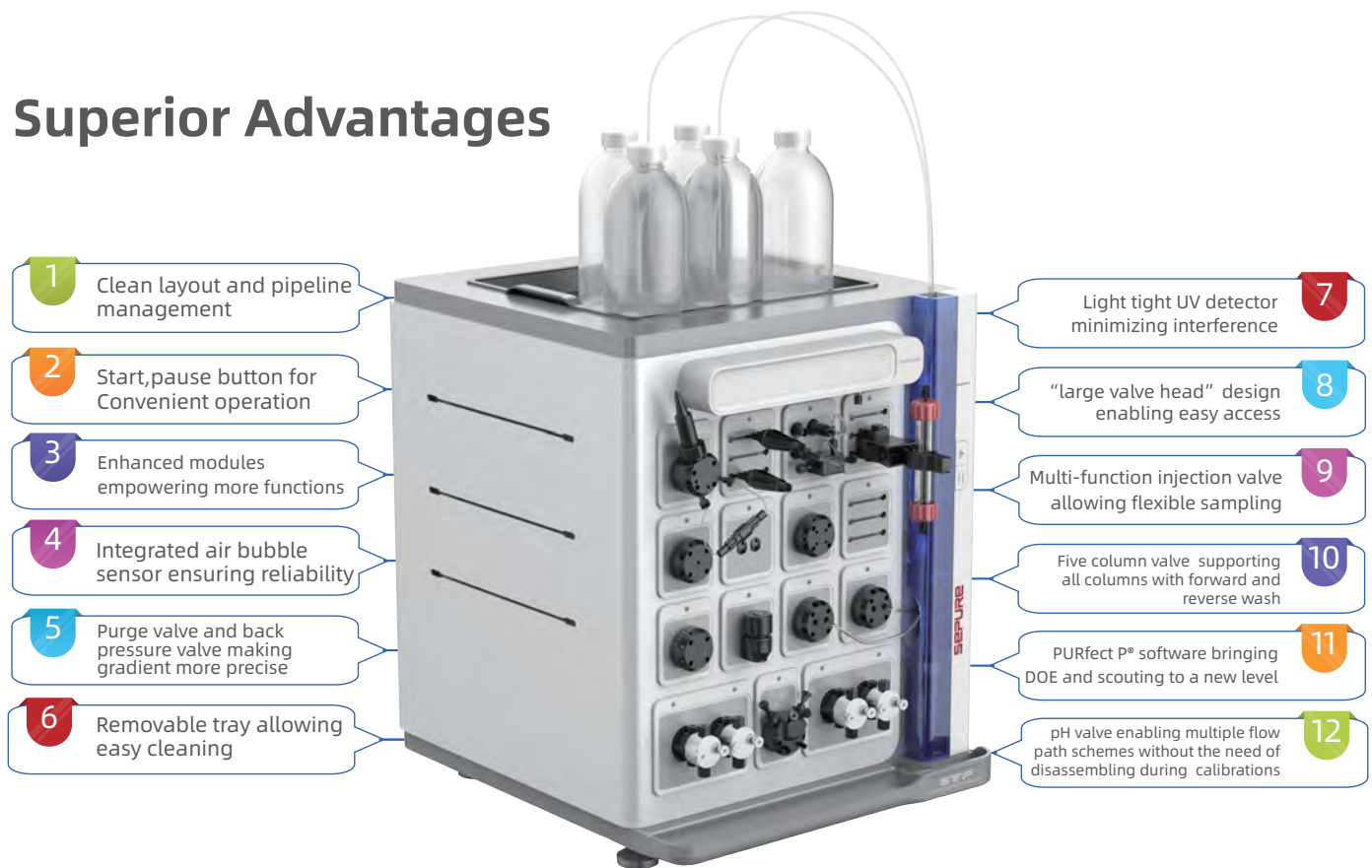
NmPILOT™ series pilot-scale pre-packed chromatography columns are developed to facilitate the smooth transition of biopharmaceutical projects from research to industrial production. They are available in internal diameters of 100mm and 200mm, with column heights ranging from 100mm to 200mm, making them ideal for purification and separation of products at a scale of up to hundreds of grams.



STP™

STP Protein Chromatography System is a state-of-the-art, compact and optimized FPLC device which minimizes the overall delay volume in the flow path, with the highly integrated valve design allowing for more flexible and automated flow path switching to be achieved. It is primarily used for laboratory -level research and method development, catering to the purification of target products such as proteins, antibodies, vaccines, nucleic acids, and diagnostic materials ranging from micrograms to tens of grams. The all-new generation of PUREfect® Protein Chromatography Workstation provides an intuitive, flexible and powerful method editor, system control, and data analysis to meet various purification process requirements. The parameter settings interface is interactive, displaying real-time operational data, and the efficient and reliable data processing system makes data analysis easy. The new PURfect P® software seamlessly integrates the Design of Experiments (DOE) functionality, allowing for minimal experimental input and intelligent analysis to achieve optimal process conditions and results.

Superior Advantages



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