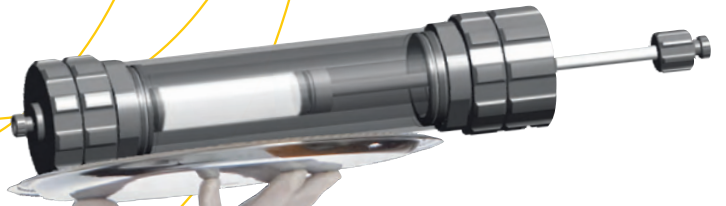
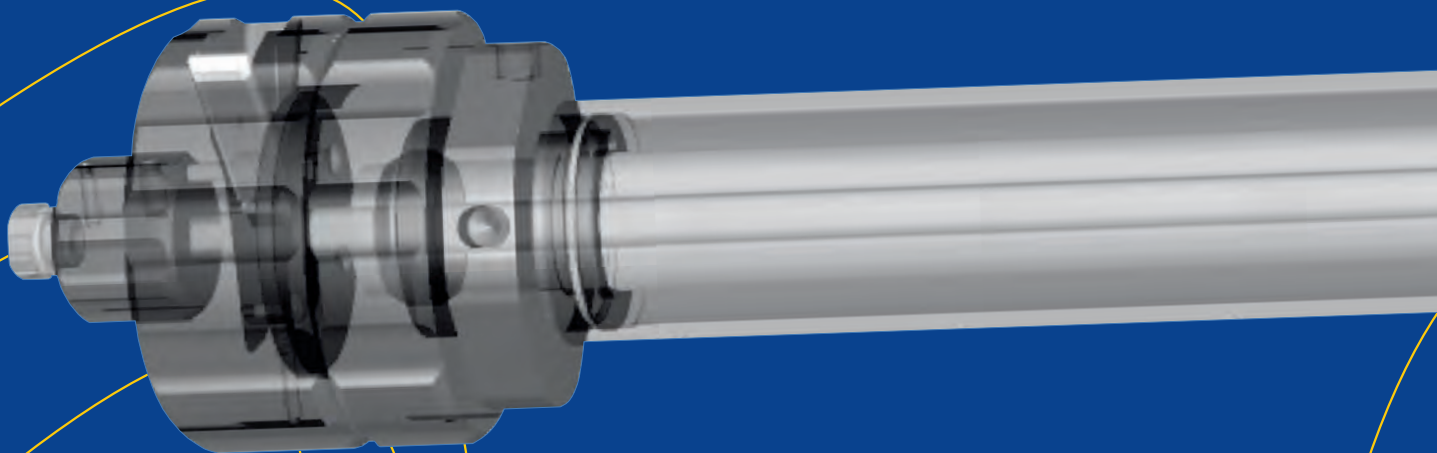


Biochromatography

Bioline





Solid base

Bioline Start System

KNAUER LC systems for biochromatography use sophisticated instrument and software solutions to achieve high quality separations. The Bioline Start System was designed for the demanding laboratory user, particularly those performing routine analyses in research and development.

Thanks to its modular design and full-featured ChromGate® software, the system offers outstanding performance and ease-of-use.

The Bioline Start System is resistant to all commonly used buffer solutions because all wetted materials are composed of biocompatible materials. The system can also be operated with solvents such as methanol or acetonitrile without restrictions. Pump heads, columns and fraction collectors can be constantly thermostatted between 0°C and 60°C.



Features

- ▶ fast and accurate, particularly suited for the quantification of proteins
- ▶ predefined software methods and prepacked screening columns provide for a quick start
- ▶ the Bioline Start System can also be upgraded with an autosampler for high sample throughput



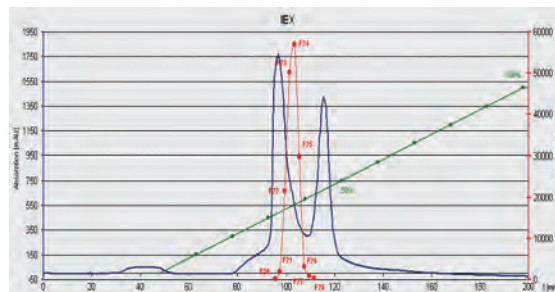
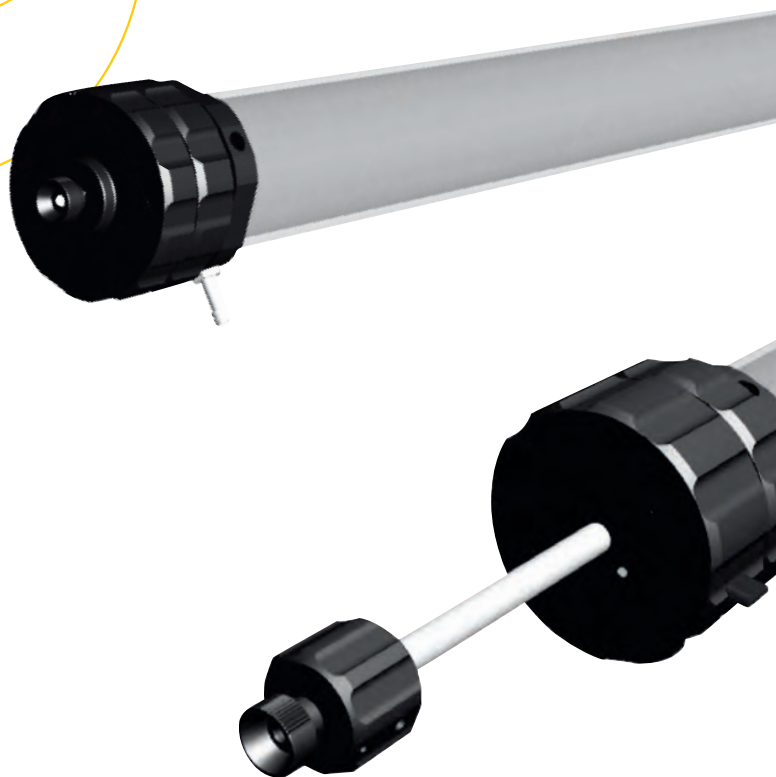
All-rounder

Bioline high resolution columns and rack

Bioline high resolution glass columns offer pressure stability up to 100 bar and a thermostatic jacket for temperatures between 0°C and 60°C, making them suitable for a wide range of biochromatography applications. The column hardware design allows for easy exchange of frits and compression of the gel bed up to 120 mm using the integrated adjustable plunger. Moreover, the columns are equipped with an integrated quick release lever and can be closed with just one thread rotation. All column components – including the glass column and flexible and fixed adaptors – are also available individually.

Features

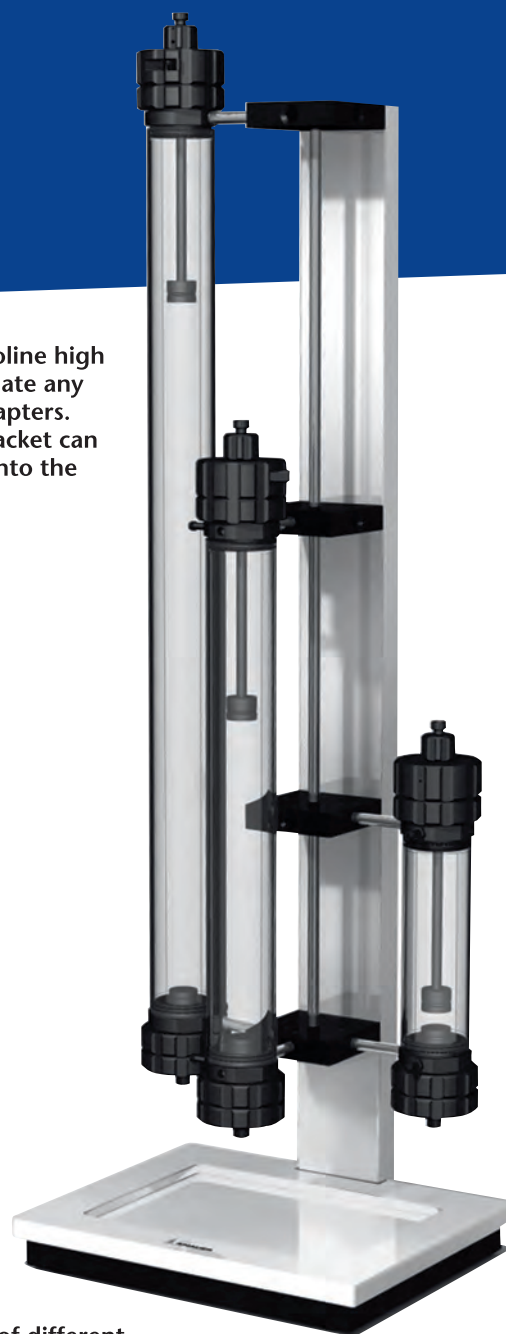
- ▶ chemically and biologically inert borosilicate glass
- ▶ pressure resistant columns allow for higher flow rates and faster separations
- ▶ glass columns are available in 3 lengths (30, 60, 100 cm) and 3 IDs (10, 20, 30 mm) for a wide range of applications and easy upscaling
- ▶ axial compression and column bed height adjustment via a variable adaptor with integrated quick release lever
- ▶ "Uniform Flow" distributor on both adaptors makes reverse flow ("Up/Down Flow") possible
- ▶ thermostating jacket is resistant to cooling liquid
- ▶ easy to exchange PEEK and PTFE frits
- ▶ robust, pressure resistant design of funnel and fingertight adaptors for safe handling, ease-of-use and longevity



Purification of enzymes (β -galactosidase) by IEX



The Bioline Rack was designed specifically for Bioline high resolution glass columns but can also accommodate any conventional LC or MPLC columns using rack adapters. Glass columns equipped with a thermostating jacket can be cooled with a circulating coolant integrated into the rack.



Features

- ▶ flexible assembly of up to 3 Bioline columns, of different or equal size, or other equipment and other columns
- ▶ central column cooling integrated into the rack
- ▶ includes drip tray and all accessories

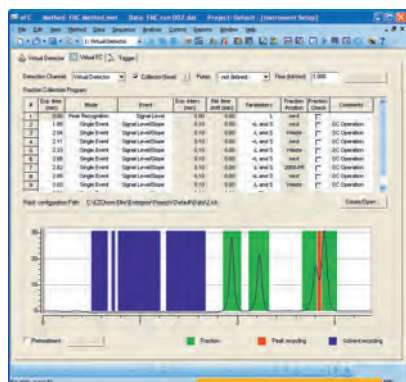


Purification

Bioline Protein Purification System

The Bioline Protein Purification System was designed for routine analyses such as quality control, as well as method development or other tasks requiring more than one separation column.

This system is based on the same modular system architecture as the Bioline Start System and offers the same specifications for eluent compatibility and functionality. Flexible automatic column switching and fraction collection are supported. ChromGate® FRC software controls the system and offers advanced fractionation algorithms for reproducible purification of valuable products.



Fractionation setup in ChromGate®



Features

- ▶ fast and accurate for purification and quantification in one system including automatic switching valves, injection valve, and fraction collector
- ▶ predefined software methods and prepacked screening columns provide for a quick start
- ▶ optionally available with autosampler for full automation and high throughput

Large quantities

Bioline process chromatography systems



Bioline Process Chromatography Systems offer customizable computer-based upscaling from batch-MPLC up to the kilogram-scale using simulated moving bed (SMB) technology for continuous process purification (eg, 4-zone SMB).

For more information, please contact us at info@knauer.net or call +49-(0)30-809727-0.

Configurations

- ▶ Semipreparative MPLC configurations up to 250 ml/min and up to 500 ml/min for milligram-scale purification
- ▶ Batch configuration with 1 or 2 pumps for up to a maximum of 2 l/min for 50 cm ID columns
- ▶ SMB for gram-scale purification
- ▶ 4-zone SMB with 4 pumps for kilogram-scale purification

High expectations

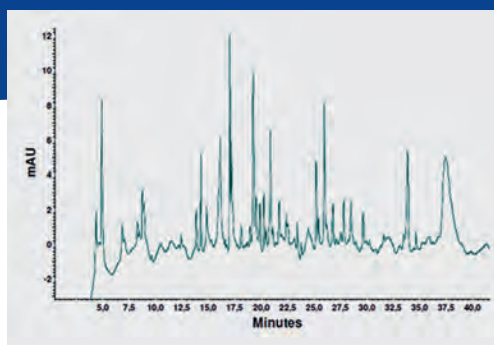
KNAUER analytical systems



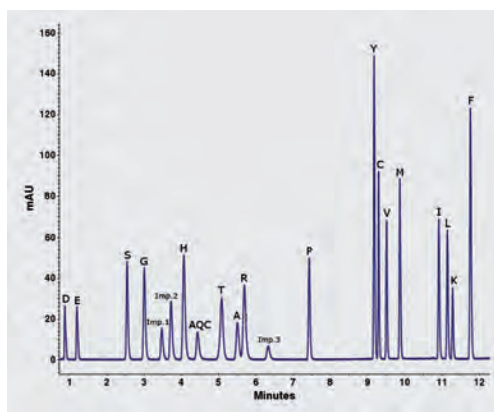
PLATINblue UHPLC

Reliable analytical HPLC systems offering accurate and reproducible measurement results are essential for the monitoring of all bioseparations. KNAUER offers Smartline HPLC for flexible and reliable separations and PLATINblue UHPLC for ultra fast high resolution separations. These systems allow for efficient HPLC or UHPLC analysis of biochemical substances with UV detection or mass spectrometry. As with all of our Bioline systems, both analytical HPLC systems use the same GLP-compliant ChromGate® software platform, offering consistent handling, data processing and reduced training costs.

For more information, please contact us at info@knauer.net or call +49-(0)30-809727-0.



Tryptic digest of cytochrome C



High speed separation of protein hydrolysate amino acids

Features

- ▶ Smartline HPLC for pressures up to 700 bar and flow rates up to 10 ml/min for conventional and fast HPLC
- ▶ PLATINblue UHPLC for pressures up to 1000 bar and flow rates up to 2.0 ml/min for maximum resolution with sub-2 µm particle size columns
- ▶ Complete control and data acquisition from ChromGate® software

Facts

Bioline Start System

Flow rate range	0.05 - 50 ml/min
Max. pressure	150 bar
Detection	UV/Vis
Wavelength range	190 - 740 nm
Noise	$< 2 \times 10^{-5}$ AU
System control	ChromGate® software
Architecture	32-bit Client/Server
Conformity	GLP, FDA 21 CFR Part 11

Bioline high resolution columns and rack

Column	borosilicate glass
Inner diameter	10, 20, 30 mm
Column lengths	30, 60, 100 cm
Max. pressure	100 bar
Frits	PEEK and PTFE
Rack capacity	3 Bioline columns
Thermostatting	central column cooling integrated into the rack

Bioline Protein Purification System

Flow rate range	0.05 - 50 ml/min
Max. pressure	150 bar
Detector A	UV/Vis
Wavelength range	190 - 740 nm
Noise	$< 2 \times 10^{-5}$ AU
Detector B	conductivity (contactless)
Measurement range	up to 100 mS/cm
pH measurement	yes
Fractionation	fast drive
Fractionation vessels	4 x 96 deep-well or microtiter plates 4 x racks with 48 vials (2 ml) 4 x racks with 12 vials (5 or 10 ml)
Fractionation flow rate	up to 5 ml/min
Cooling	yes (optional)
System control	ChromGate® software FRC
Software kernel	EZChrom Elite™
Fractionation	automatic, based on level, slope, or purity
Application	complete quantification and purification of peptides and proteins

Technical data are subject to change without notice.

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HPLC · SMB · Osmometry

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