KNAUER

PLATINblue
UHPLC/HPLC Plus systems

▶ What limits your LC today?

PLATIN blue by Knauer

Optimized

Eluent supply	✓
Eluent mixing	✓
Injection	✓
Column	✓
Detection	✓
Data processing	✓

Flexibility

More than just UHPLC

The PLATINblue family of liquid chromatography instruments was designed to offer superior results not only in terms of resolution and throughput, but also in terms of reliability, operating costs, and ease-of-use. PLATINblue systems are capable of running under standard HPLC conditions, fast LC conditions, and UHPLC up to 1000 bar.

Freedom of choice

Depending on your lab's current application focus we offer two versions of PLATINblue premium liquid chromatography systems:

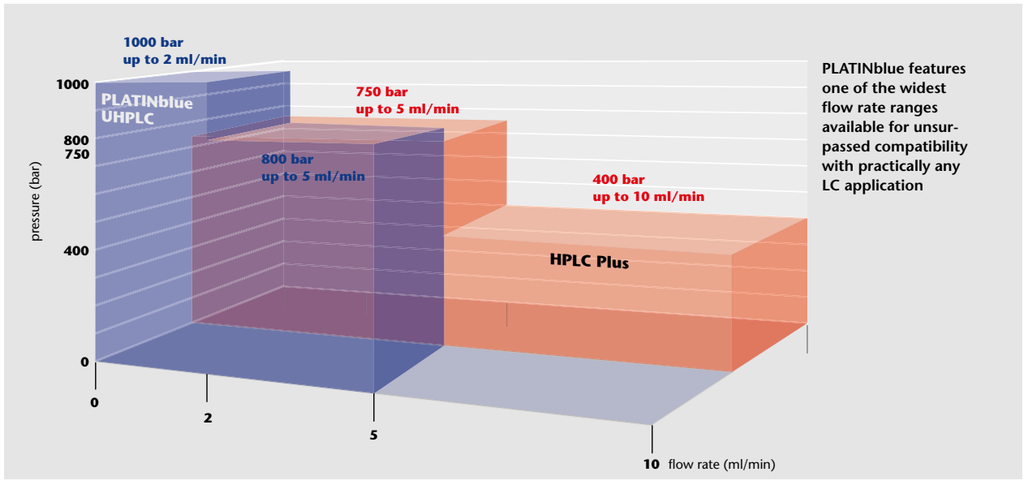
- **PLATINblue UHPLC**
  - Ultimate performance with sub-2 µm fully porous and core-shell columns
  - Up to 1000 bar
  - Highest sensitivity
  - Ideal for MS
- **PLATINblue HPLC Plus**
  - Routine HPLC up to 750 bar
  - Upgradeable to UHPLC at any time
  - Most affordable PLATINblue solution

PLATINblue features

- Modular system architecture
- Eluent supply with integrated degasser
- Optimized system volume for high resolution
- High speed autosampler
- Fast detectors, up to 100 Hz data rate
- PDA available with high sensitivity flow cell
- User-friendly design and operation
- Supported by software packages: ChromGate® (incl. OQ/PQ), EZChrom Elite, and Chromeleon®, as well as MS software Xcalibur™ and Analyst™

Gradient flexibility

- Binary high pressure gradient for ultra fast composition changes
- Quaternary low pressure gradient (standard with HPLC Plus)



PLATINblue features one of the widest flow rate ranges available for unsurpassed compatibility with practically any LC application

Productivity

High resolution and throughput

Increase your laboratory's productivity with PLATINblue UHPLC/HPLC Plus and achieve:

- higher resolution and unmatched separation efficiency at equivalent column lengths
- faster separations, thanks to the use of shorter columns with equal or higher separation performance

High resolution

- PLATINblue UHPLC offers ultimate performance with an extended pressure range up to 1000 bar (15000 psi) at flow rates of up to 2 ml/min and of 800 bar (11600 psi) up to 5 ml/min
- Optimized system volume

Short cycle time

- fast gradients with up to 3 % composition change rate per second
- high-performance autosampler for fast injection (15 s or < 60 s with needle wash)
- optimized communication and software operations for short initialization times

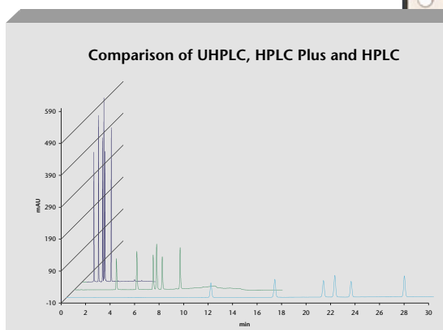
High throughput

- process up to 768 samples in 2 x 384-well plates or up to 96 samples in standard 1.8 ml vials

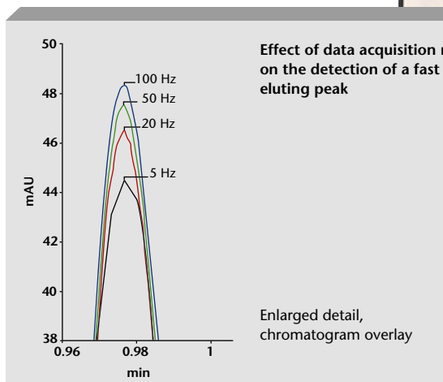
Fast detection

- data acquisition rates up to 100 Hz provide higher resolution and peak capacity, as well as a more accurate integration

Comparison of UHPLC, HPLC Plus and HPLC



Separation of steroids



Effect of data acquisition rate on the detection of a fast eluting peak

Enlarged detail, chromatogram overlay

Tip

The PLATINblue system includes eluent filters for protection against particulate matter. When working with columns packed with sub-2 µm particle sizes, samples should also always be filtered through a 0.2 µm membrane.

Precision

Sensitivity and reproducibility

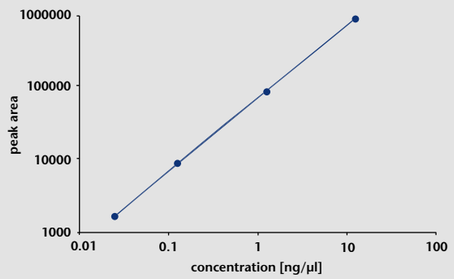
High-quality PLATINblue components were designed to work together perfectly to enable accurate measurement with optimal reproducibility – a prerequisite for analysis results you can rely on.

The sharp and narrow peaks produced by fast chromatography in conjunction with low-noise and low-drift PDA detectors ensure sensitive measurements.

Ultimate detection sensitivity

- electronically controlled pump drive provides for low pulsation eluent flow and a stable baseline
- high light intensity over the full UV-Vis range through the combination of a long-life "high brightness" D_2 with a tungsten-halogen lamp
- optimized flow cells with path lengths up to 50 mm and volumes as low as 2.4 µl allow for most sensitive detection of narrow peaks
- low noise (5 µAU) and drift specifications
- excellent linearity of up to 3 AU for precise simultaneous determination of main substances and trace components

Linearity of detection over 3 orders of magnitude

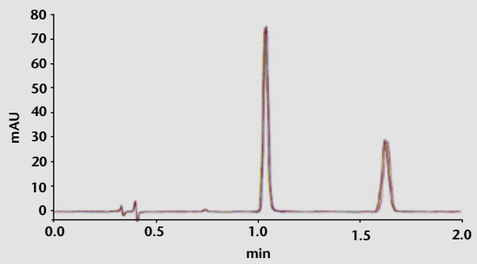


anthracene in ACN/H_2O

Reproducibility

Precision can only be as good as the weakest link in the chain. All critical components of the PLATINblue systems were optimized for the demanding requirements of fast LC and UHPLC, resulting in systems with excellent reproducibility. The advanced column thermostat T-1 adds to overall system precision by keeping column conditions stable and cooling the effluent before detection.

Excellent reproducibility of overall system



Six successive separations using online mixing of a ternary eluent
Eluent: 3 % CH_3COOH/MeOH/ACN = 78/20/2
Flow rate: 1 ml/min, Temp.: 30 °C, Wavelength: 225 nm

Retention time
< 0.3 % RSD
Peak areas
< 1.1 % RSD with partial loopfill injection
(< 0.3 % RSD with full loop injection)

Tip

A very high injection peak can be disadvantageous in fast chromatography since the first sample peaks elute very quickly after the injection. Dissolve the sample in eluent whenever possible to minimize this disturbance.

Ease of use

Simple to operate and to service

To stay focused on what is really important, the PLATINblue ultra high-performance LC system is equipped with many useful features that make operation more convenient, relieve you from time-consuming routine checks and assist you in your daily work.

Simple lamp replacement thanks to detachable side panel

Tip

The lifespan of the detector lamps can be conserved by having one or both turned off during interruptions in analysis and switched back on automatically when resuming measurements.

Comfortable operation

- intuitive touchscreen control*
- automatic configuration of communication with PC and software eases setup
- automatic selection of optimal detector integration time
- standby mode

Easy access for quick maintenance

- solid glass doors provide convenient access to system components
- removable side panel for easy lamp exchange and maintenance

Reliable and GLP compliant

- fast Ethernet communication
- automatic pump head detection (RFID)
- column thermostat: RFID recognition for up to six columns simultaneously
- automatic lamp detection
- automatic wavelength verification
- comprehensive GLP reporting functions

Safety and protection

- system functions are monitored, minimum pressure shut-off and eluent level control feature in ChromGate® software provide protection against leaks and running dry
- soft-start flow for protection of columns and system components
- Leak detection

PLATINblue

Component overview

▶ PLATINblue UHPLC

HPG Pump: P-1/P-1 A60013/14

Ultra high pressure pump optimized for fast liquid chromatography, capable of pressures up to 1000 bar (15000 psi) and flow rates up to 5 ml/min.
The electronically controlled pump drive provides for low pulsation, a highly precise flow rate and a stable baseline.

Flow rate	0.01 – 5.0 ml/min or 0.001 ml increments
Flow rate accuray	±1 %
Flow rate precision	< 0.1 %
Pressure range **UHPLC:**	1000 bar up to 2 ml/min, 800 bar up to 5 ml/min
Eluent mixing	SmartMix UHPLC mixing technology
binary HPG:	2 x Pump P-1, integrated 2 channel degasser and SmartMix
Features	touchscreen, active pressure and pulsation compensation, RFID automatic pump head detection (GLP), interchangeable pump heads

also available as:

▶ PLATINblue HPLC Plus

HPG Pump P-1/P-1 A60015/16

Gradient pump configuration for pressures up to 750 bar

▶ PLATINblue HPLC Plus

LPG Pump: P-1/M-1 A60015/A60513

High pressure pump optimized for fast and routine HPLC, capable of pressures up to 750 bar (10875 psi). The electronically controlled pump drive provides for low pulsation and a highly precise flow rate. This most affordable PLATINblue solution can be upgraded to UHPLC at any time.

Flow rate	0.01 – 10.0 ml/min 0.001 ml increments
Flow rate accuray	± 1 %
Flow rate precision	< 0.1 %
Pressure range **HPLC Plus:**	750 bar up to 5 ml/min, 400 bar up to 10 ml/min
Eluent mixing	SmartMix HPLC mixing technology
quaternary LPG:	1 x Pump P-1 incl. SmartMix, Modular Eluent Manager M-1, 4 channel degasser and interface

▶ PLATINblue M-1

Modular Eluent Manager A60513

Quaternary LPG	blending of up to 4 eluents
Degasser module	4 channels, Teflon® AF, high efficiency
A/D-D/A interface	24-bit, 4 analog inputs, 4 analog outputs, several digital I/O

▶ PLATINblue PDA-1

Diode Array Detector A62031

This extremely sensitive diode array detector with a data acquisition rate up to 100 Hz with dual-lamp configuration has a wavelength range of 190–1000 nm. New ultra sensitive fiber optical flow cell provides for highest detection performance. Use spectrum data to determine peak purity or to facilitate the identification of unknown substances.

Lamps	high-brightness D_2, tungsten-halogen
Wavelength range	190–1000 nm
Wavelength accuracy	< 1 nm
Max. data acquisition rate	100 Hz
Diodes	1024
Pixel pitch	< 1nm
Channels	max. 6
Noise*	±5 µAU
Drift*	< 300 µAU/h
Linearity	0 – 2 AU
Spectral bandwidth	< 2.5 nm
Special features	touchscreen, exchangeable flow cells
Standard flow cell	sensitive, fiber optical technology, fused silica, 2.4 µl, 10 mm, 100 bar
Optional flow cell	total reflection technology, up to 5 times higher sensitivity than standard flow cell, fiber optics, 10.0 µl, 50 mm, 100 bar

* according to ASTM

▶ Fluorescence Detector

A59201

With a signal-to-noise ratio of 2000 for the water Raman band, this fluorescence detector is well-suited for trace-level analysis. It features high acquisition speed and a quick response time of just 10 ms both enabling detection of sharpest peaks in ultra-fast analysis.

Lamps	xenon lamp, mercury lamp (wavelength check)
Wavelength range	200–750 nm
Wavelength accuracy	± 2 nm
Wavelength precision	± 0.2 nm
Max. data acquisition rate	50 Hz
Channels	max. 2
Signal/Noise	2000 H_2O Raman peak
Spectral bandwidth	< 20 nm
Standard flow cell	12 µl, 20 bar

Tip

The column thermostat PLATINblue T-1 is also available without switching valves.

PLATINblue AS-1

Autosampler A63500

TInject samples from well plates and standard vials accurately and fast with this UHPLC autosampler, which can handle pressures up to 1000 bar (15000 psi). Supports full and partial loopfill injection as well as “microliter-pickup” for flexible selection of injection volumes. The tray cooling option allows for analysis of temperature-sensitive samples.

UHPLC injection	up to 1000 bar (15000 psi)
Sample capacity	max. 768 sample positions with well plates or 96 sample positions with standard autosampler vials
Injection volume	1–100 µl
Standard fitted loop	10 µl
Injection cycle time	15 s, < 60 s with wash
Injection modes	full loop, partial loopfill and “microliter-pickup“
Precision	RSD < 0.3 % full loop injection
Carry over	< 0.05 % with needle wash
Sample tray cooling	4–22 °C

PLATINblue T-1

Column Thermostat A63410/A63412*

This column thermostat can accommodate up to six HPLC columns and ensures stable temperature conditions in the range of 5 to 80 °C. The eluent is cooled before reaching the detector to minimize noise and drift. It also features RFID column recognition for up to six columns and has two valves for advanced switching tasks.

Temperature range	5 – 80 °C
Temperature stability	0.1 °C
Postcolumn cooling	yes, 15–35 °C
Switching valves	max 2 (available types: 6, 8, 10 port multi position or 6 and 10 port 2-position)
Column compartment	370 mm x 85 mm (L x W)
Column holder	magnetic
Column recognition:	RFID for up to six columns**

* A63412 version without touchscreen and valves

** Non-KNAUER columns can be fitted with a custom-programmed KNAUER RFID tag. Ask for details.

Manual injection valve

A64601

UHPLC injection up to 1000 bar (15000 psi)
Automatic switching valves and a manual injection valve are also available

Cleverness

User-friendly, scalable and compliant

ChromGate® PLATINblue Edition is our easy-to-use software solution for laboratories with high demands for functionality, flexibility and scalability, as well as GLP compliance. Based on EZChrom Elite™ software, ChromGate® PLATINblue Edition software adds extended KNAUER-specific functions.

Smart product features that save time

- automatic system configuration for the PLATINblue system via the instrument network
- navigation with tree structure for quick orientation

Only ONE software for your chromatography laboratory is required to control all KNAUER instruments and a wide range of chromatography instrumentation from other manufacturers. Your lab benefits from reduced training expenses, uniform operability and harmonized data reporting.

Flexible reporting functions

- report layouts are easily customized via multiple options in Custom Report feature
- predefined standard reports for quick output of results

Scalability and compliance

- scalable from a single instrument to a multi-user enterprise-wide solution thanks to Client/Server functionality
- FDA 21 CFR Part 11 compliance

Easy to use

- simple method creation via software “wizards”
- “sequence wizard” provides assistance and saves time when programming a sequence of analyses

Tip ChromGate® PLATINblue Edition Software

Our full-featured scalable chromatography software includes one client/server licence (additional licences optional). Every complete PLATINblue system also includes a major brand PC with the latest technology, large TFT display and 8-port Ethernet/LAN router.

Convenient diode-array features

- clear presentation of 3-D data
- easy creation of spectrum libraries and fast spectrum search

NEW

- PLATINblue systems can also be controlled by Dionex Chromeleon™ software.

Ultimate

Front-end for LC/MS

PLATINblue UHPLC in combination with the MSQ Plus™ mass spectrometer offers the most sensitive and compact LC/MS solution for high throughput applications.

Seamless integration

- when operating the PLATINblue UHPLC system as part of an LC/MS solution, Xcalibur™ takes over complete LC instrument control and mass spectrometer data handling
- splitless sample introduction at flow rates up to 2 ml/min for maximum transfer of analytes

High performance

- highly sensitive ion optics
- 60° M-Path™ source for high ruggedness and lowest carryover
- square quadrupole RF/DC pre-filter lens protects from contamination and enables high-efficiency transmission
- fast scan speed up to 12000 amu/s for full compatibility with narrow UHPLC peaks

Work with ease

- the MSQ Plus™ detector is very robust and easy to handle
- exchanging the probes between ESI and APCI mode takes only minutes
- tool-free maintenance of ionization source

Versatile

- available with two ionization modes: electrospray ionization (ESI) or atmospheric pressure chemical ionization (APCI)
- ESI is a very mild method, even for thermally labile species. It is suitable for polar compounds or ionic substances in solution, e.g. anions/cations, peptides, small nucleotides, drugs, or sugars (< 2000 Da)
- APCI requires higher vaporization temperatures, but is less dependent on solvent type and solvent flow rate. Typical detectable compounds include hydrocarbons, alcohols, aldehydes, ketones, esters – excluding acidic or basic groups (< 1000 Da)

Detail of MSQ Plus with atmospheric pressure chemical ionization (APCI) installed

Detail of MSQ Plus with electrospray ionization (ESI) installed

MS detector specifications

Ionization modes	electrospray (ESI) or atmospheric pressure chemical ionization (APCI)
Mass range	17 – 2000 Da
Sensitivity*	
ESI, positive ion	1000:1 RMS, 50 pg erythromycin (10 µl x 5 pg/µl)
ESI, negative ion	500:1 RMS, 20 pg p-nitrophenol (10 µl x 2 pg/µl)
APCI, positive ion	200:1 RMS, 50 pg erythromycin (10 µl x 5 pg/µl)
APCI, negative ion	50:1 RMS, 20 pg p-nitrophenol (10 µl x 2 pg/µl)

*signal-to-noise, loop injection, 1 ml/min flow rate

Xcalibur™ MS Data System

Xcalibur is a very versatile and easy-to-use mass spectrometry data system, offering transparent navigation through the process of instrument setup, sequence setup, and data acquisition. MS data analysis is simplified using any of the three browser environments: Qual Browser, Quan Browser, and Library Browser. Intuitively create reports with XReport software.

The Xcalibur MS data system provides for control and data acquisition of all PLATINblue instruments and the MSQ Plus MS detector, as well as the complete range of Thermo MS detectors.

Versatility

Wide range of application areas

PLATINblue systems can be flexibly used to increase the throughput and sensitivity of many applications. Benefit from the advantages of high-speed UHPLC applications without having to completely convert your established HPLC methods. The following are only a few examples of the applications possible with PLATINblue.

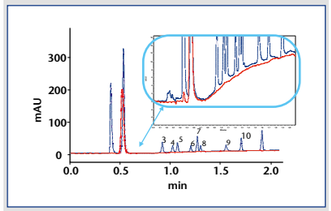
Pharmaceutical

Separation of paracetamol and common synthesis impurities

Separation column
BlueOrchid C18 1.8 µm, 100 x 2 mm

Separation conditions

Eluent:	A: 1.7 mM NaH_2PO_4, pH 3.7 B: ACN
Gradient:	0.0 – 0.3 min 13 % B 0.3 – 2 min 13 – 70 % B 2 – 2.5 min 70 % B
Flow rate:	0.85 ml/min
Mode:	RP-Mode, gradient
Injection volume:	1 µl
Pressure:	950 bar (13800 psi)
Detection:	MW-1, 254 nm (100 Hz, 0.005 s) 10 mm, 2 µl flow cell
Temperature:	50 °C



1	4-Aminophenol
2	Paracetamol
3	N-(4-hydroxyphenyl)propanamide
4	N-(2-hydroxyphenyl)acetamide
5	N-(3-chloro-4-hydroxyphenyl)acetamide
6	1-(4-Hydroxyphenyl)ethanoneoxime
7	N-phenylacetamide
8	4-(Acetylamino)phenyl acetate
9	4-Nitrophenol
10	Chloroacetanilide
11	1-(2-Hydroxyphenyl)ethanone

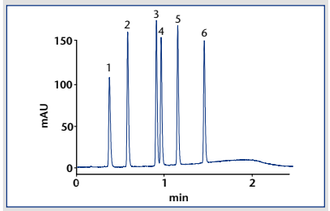
Pharmaceutical

Separation of steroids

Separation column
BlueOrchid C18 1.8 µm, 50 x 2 mm

Separation conditions

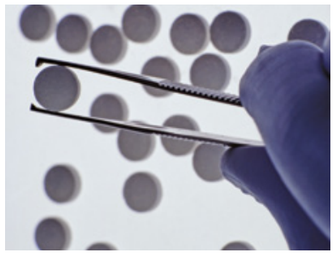
Eluent:	A: H_2O B: ACN
Gradient:	0 – 1.5 min 35 % – 75 % B 1.5 – 2 min 75 % B
Flow rate:	1.0 ml/min
Mode:	RP-Mode, gradient
Injection volume:	0.5 µl
Pressure:	650 bar (9430 psi)
Detection:	PDA-1, 254 nm (100 Hz, 0.005 s) 10 mm, 2 µl flow cell
Temperature:	30 °C



1	Cortisone
2	Corticosterone
3	Testosterone
4	Deoxycorticosterone
5	Norgestrel
6	Progesterone

Pharmaceutical

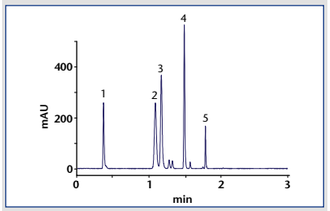
Separation of Sudan dyes



Separation column
BlueOrchid C18 A 1.8 µm, 50 x 2 mm

Separation conditions

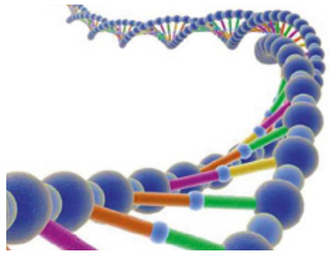
Eluent:	A: 1.7 mM NaH_2PO_4, pH 4 B: ACN
Gradient:	0 – 0.8 min 8 % B 0.8 – 1.8 min 8 % – 40 % B
Flow rate:	1.4 ml/min
Mode:	RP-Mode, gradient
Injection volume:	1 µl
Pressure:	750 bar (10880 psi)
Detection:	PDA-1, 265 nm (100 Hz, 0.005 s) 10 mm, 2 µl flow cell
Temperature:	40 °C



1	Sulfadiazine
2	Sulfamethiazole
3	Sulfamethoxypyridazine
4	Sulfamethoxazole
5	Sulfamethoxine

Bioanalytical

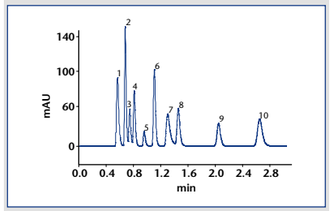
Separation of nucleosides and bases



Separation column
BlueOrchid PFP 1.8 µm, 100 x 2 mm

Separation conditions

Eluent:	20mM NH_4Ac, pH 3.5 10 % A/MeOH 90:10 (v/v)
Flow rate:	0.5 ml/min
Mode:	RP-Mode, isocratic
Injection volume:	1 µl
Pressure:	570 bar (8270 psi)
Detection:	PDA-1, 210 nm (100 Hz, 0.001 s) 10 mm, 2 µl flow cell
Temperature:	30 °C



1	Cytosine
2	Uracil
3	Cytidine
4	Uridine
5	Guanine
6	Thymine
7	Adenine
8	Guanosine
9	Thymidine
10	Adenosine

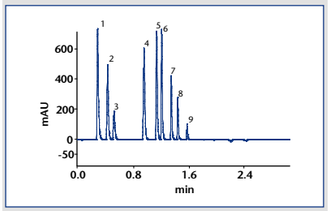
Environmental

Determination of pesticides I

Separation column
BlueOrchid C18 1.8 µm, 50 x 2 mm

Separation conditions

Eluent:	A: H_2O B: ACN
Gradient:	0 – 0.5 min 35 % B 0.5 – 1.5 min 35 % – 100 % B 1.5 – 2.0 min 100 % B
Flow rate:	0.6 ml/min
Mode:	RP-Mode, gradient
Injection volume:	1 µl
Pressure:	300 bar (4350 psi)
Detection:	215 nm (50 Hz, 0.05 s) 10 mm, 2 µl flow cell
Temperature:	40 °C



1	Chloridazon
2	Metoxuron
3	Monuron
4	Diuron
5	Propazine
6	Linuron
7	Metolachlor
8	Parathion-ethyl
9	β-Endosulfan

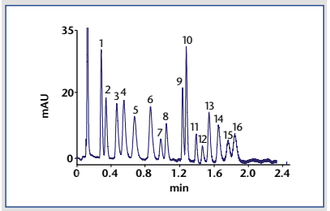
Environmental

Determination of 16 EPA PAH

Separation column
BlueOrchid PAH, 50 x 2 mm

Separation conditions

Eluent:	A: MeOH/H_2O 75:25 B: ACN
Flow rate:	1.0 ml/min
Mode:	RP-Mode, gradient
Injection volume:	1 µl EPA standard
Pressure:	< 500 bar (< 7250 psi)
Detection:	254 nm (100 Hz, 0.01 s) 10 mm, 2 µl flow cell
Temperature:	25 °C

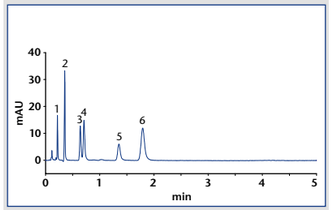


1	Naphthalene
2	Acenapthalene
3	Acenapthene
4	Fluorene
5	Phenanthrene
6	Anthracene
7	Fluoranthene
8	Pyrene
9	Benzo(a) anthracene
10	Chrysene
11	Benzo(b) fluoranthene
12	Benzo(k) fluoranthene
13	Benzo(a)pyrene
14	Dibenzo(a,h) anthracene
15	Benzo(g,h,i) perylene
16	Indeno(1,2,3-cd) pyrene

Food

Quick determination of tocopherols

Separation column	
BlueOrchid Si 1.8 µm, 50 x 2 mm	
Separation conditions	
Eluent:	Heptane/2-butanol 1000:4 (v/v)
Flow rate:	1.7 ml/min
Mode:	NP-Mode, isocratic
Injection volume:	1 µl
Pressure:	350 bar (5080 psi)
Detection:	MW-1, 280 nm (50 Hz, 0.01 s) 10 mm, 2 µl flow cell
Temperature:	25 °C

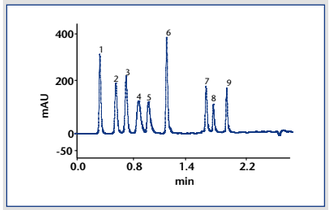


1	Trans-retinol
2	Alpha-tocopherol
3	Beta-tocopherol
4	Gamma-tocopherol
5	Delta-tocopherol
6	Vitamin D_2

Food

Determination of water soluble vitamins

Separation column	
BlueOrchid C18 A 1.8 µm, 100 x 2 mm	
Separation conditions	
Eluent:	A: 50 mM NaH_2PO_4 pH 4 B: MeOH
Mode:	RP-Mode, gradient
Flow rate:	0.7 ml/min
Injection volume:	1 µl
Pressure:	800 bar (11600 psi)
Detection:	PDA-1, 254 nm (50 Hz, 0.01 s) 10 mm, 2.4 µl flow cell
Temperature:	30 °C

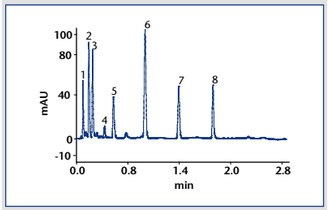


1	Ascorbic acid
2	Thiamine
3	Nicotinic acid
4	Pyridoxal
5	Pyridoxin
6	Nicotinamid
7	Folic acid
8	Cyanocobalamine
9	Riboflavin

Food

Separation of Sudan dyes

Separation column	
BlueOrchid C18 1.8 µm, 50 x 2 mm	
Separation conditions	
Eluent:	A: H_2O (+ 0.1 % formic acid) B: ACN (+ 0.1 % formic acid)
Gradient:	0 – 0.5 min 70 % B 0.5 – 1.5 min 100 % B 1.5 – 2.0 min 100 % B
Mode:	RP-Mode, gradient
Flow rate:	1.0 ml/min
Injection volume:	1 µl
Pressure:	400 bar (5800 psi)
Detection:	PDA-1, 240 nm (50 Hz, 0.01 s) 10 mm, 2.4 µl flow cell
Temperature:	25 °C

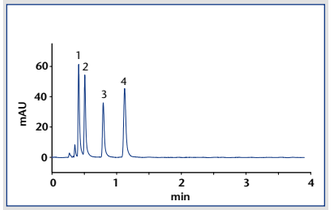


1	Impurity 1
2	4-Phenylazophenol
3	α-Naphthyl red
4	Impurity 2
5	Impurity 3
6	Sudan II
7	Sudan III
8	Sudan IV

Clinical

Determination of sedatives, e.g. barbiturates

Separation column	
BlueOrchid C18 1.8 µm, 50 x 2 mm	
Separation conditions	
Eluent:	MeOH/H_2O 60:40 (v/v)
Flow rate:	0.5 ml/min
Mode:	isocratic
Injection volume:	1 µl
Pressure:	826 bar (11980 psi)
Detection:	MW-1, 254 nm (80 Hz, 0.005 s)
Temperature:	40 °C

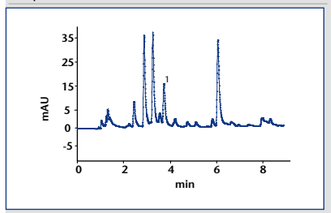


1	barbital
2	luminal
3	prominal
4	revonal

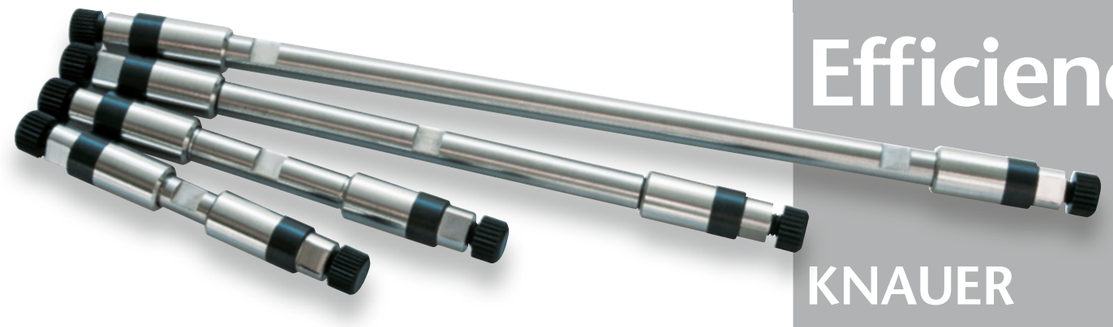
Clinical

Separation of tt-muconic acid in urine (I)

Separation column	
BlueOrchid C18 A 1.8 µm, 100 x 2 mm Phenyl 1.8 µm 100 x 2 mm (column tandem)	
Separation conditions	
Eluent:	A: H_2O (1 % HAc) B: MeOH
Gradient:	0 – 7.5 min 5 % B – 25 % B 7.5 – 7.6 min 25 % B – 90 % B 7.6 – 9.5 min 90 % B 9.5 – 9.6 min 90 % B – 5 % B
Flow rate:	0.4 ml/min
Mode:	RP-Mode, gradient
Injection volume:	10 µl
Pressure:	590 bar (8560 psi)
Detection:	PDA-1, 259 nm (50 Hz) 10 mm, 2 µl flow cell;
Temperature:	40 °C



1	tt-Muconic acid



Efficiency

KNAUER UHPLC columns

KNAUER offers three different column product lines, specifically designed for ultra high-performance liquid chromatography applications.

BlueShell® columns feature particles which consist of a solid core and a porous shell. The 2.6 µm diameter particles enable high speed and high resolution separations without undesirable high backpressure. The reduced depth of the outer porous layer limits the diffusional path of the analytes, leading to minimized mass transfer resistance and minimized peak broadening. BlueShell columns can achieve up to 200.000 plates/meter. Available as a C18, C18A, and HILIC phase.

BlueOrchid columns with fully porous 1.8 µm particle are designed to provide high efficiency and stability, making them the ideal choice for demanding applications. They are available in 12 modifications for a wide range of applications.

Bluespher® columns were developed to feature very similar characteristics and selectivities to the KNAUER Eurospher I and Eurospher II families to make method transfer between UHPLC, HPLC, and even MPLC easy. Based on 2 µm fully porous particles, the manufacturing process employs mono- and multi-functional silanes to achieve a maximum in loading capacity and chemical stability. All application fields of reversed phase chromatography are covered.

For more information, please refer to the detailed column brochures available on www.knauer.net

Support

Fast and reliable

Excellent support starts at the product development stage. That's why we developed PLATINblue instruments with ultimate reliability in mind. Each component was designed for maximum dependability and durability, using only the best materials available.

To keep all of the components in your PLATINblue system running with the highest performance, we offer a comprehensive support and maintenance program to ensure your system's reliable operation.

All support requests will be responded to by local authorized KNAUER support staff. Guaranteed!
A detailed report of your system's status can be easily generated by the PLATINblue ServiceTool software for fast problem diagnosis. KNAUER technical support will contact you within 24 hours with a detailed plan for resolution of the problem. If necessary, we will solve the problem at your site – quickly and without complication.

We offer you a three-year warranty on every PLATINblue system in conjunction with a service agreement. This entitles you to an all-inclusive full service plan. The reliable and continuous operation of your PLATINblue system is our highest priority.

So you can get off running right from the start, we combine the PLATINblue system installation with training for you and your team. A follow-up training session within the following six months is included in the service package at no extra cost.

We will accompany you when working out your methods, step by step. Our application experts are available Monday through Friday to assist you with any application questions you might have.
We also offer on-site demonstrations and method transfer workshops.

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