



NOVINKY A VYCHYTÁVKY V CHROMATOGRAFII THERMO SCIENTIFIC

Lukáš Plaček
Michaela Rajčanová

pragolab

ThermoFisher
SCIENTIFIC



Iontová Chromatografie



- Absolutní jednička na trhu
- Kapilární i standardní systémy
- Chromeleon

Kapalinová Chromatografie



- Nejširší aplikační záběr
- Ultra HPLC nejvyšší třídy i standardní systémy
- Chromeleon

Plynová Chromatografie

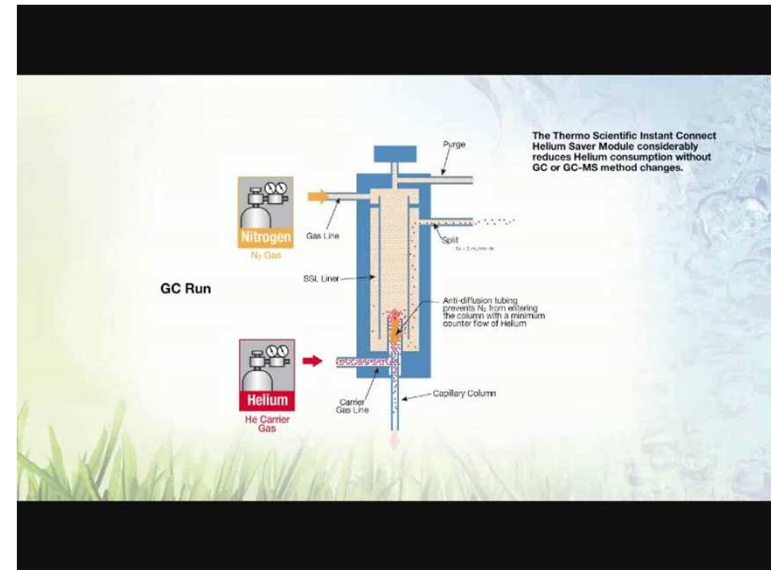
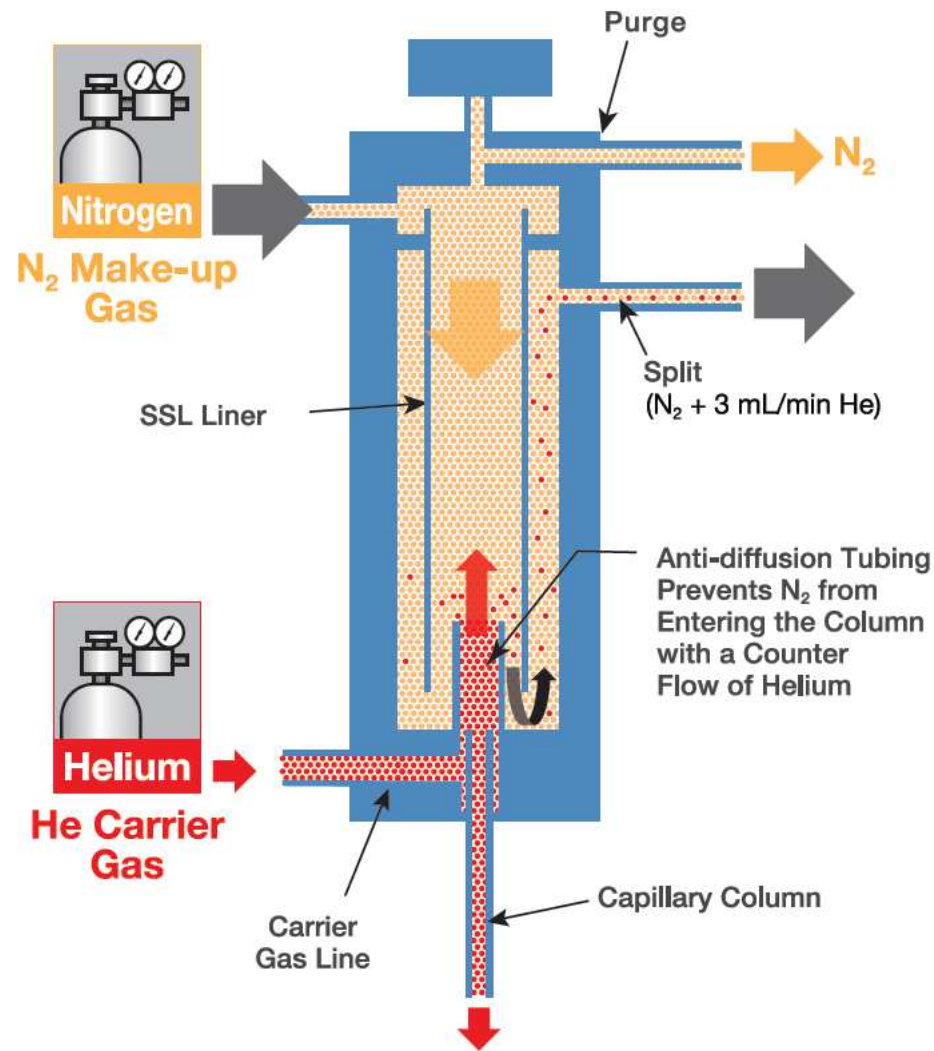


- Flexibilita – výměnné moduly
- Špičková GC-MS technika
- Chromeleon



CHROMELEON 7.2
Simply Intelligent

GC: helium saver modul



Helium Saver Extends the Lifetime of the Helium Cylinder

3.5 years continuously used 24/7/365 for GC-MS analysis

5.4 years shutting helium off or to N₂ during weekends

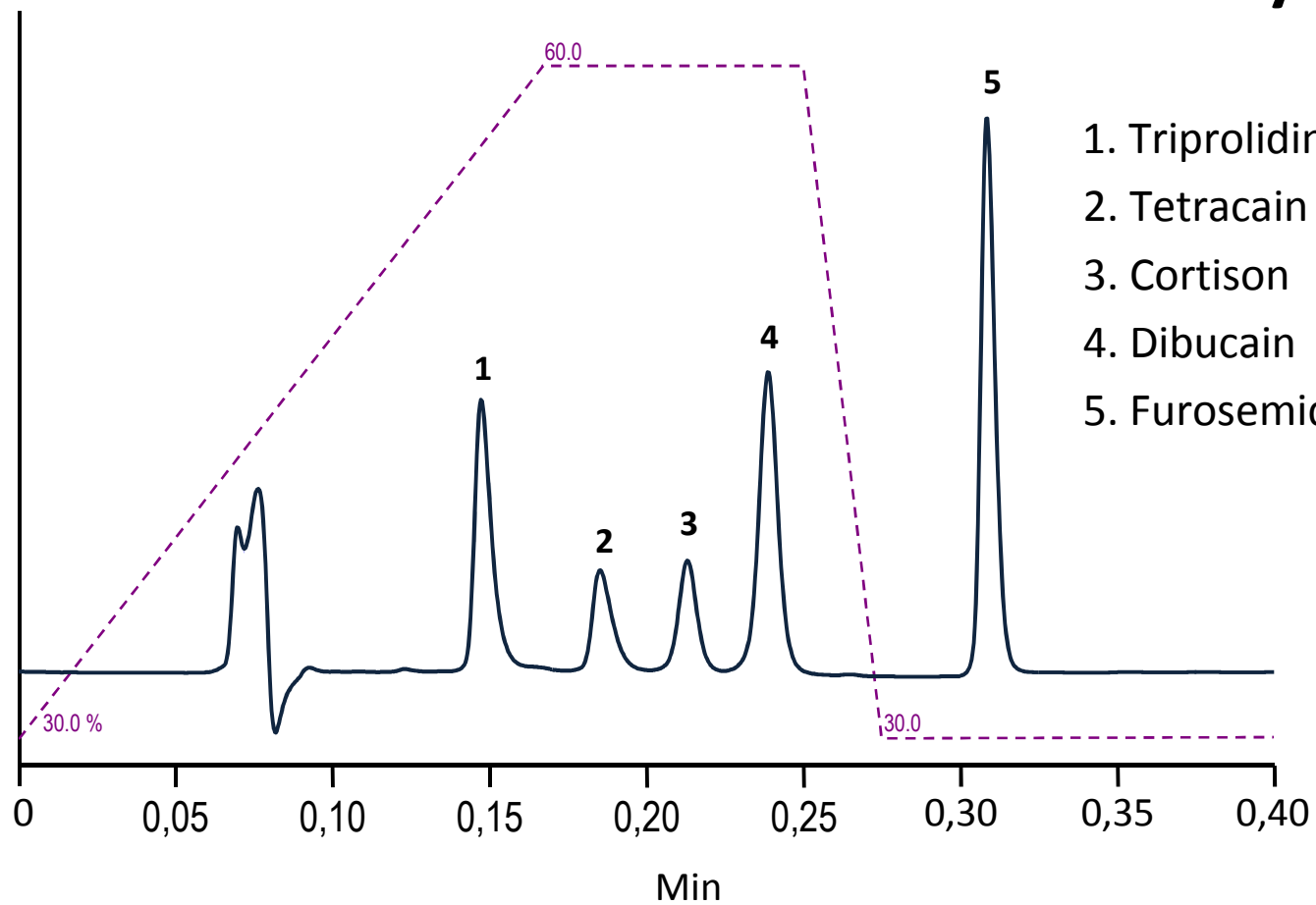
10.5 years shutting helium off or to N₂ overnight (8 hr day)

14.6 years shutting helium off or to N₂ on weekends and overnight

This could be the **last and only** helium cylinder that will be needed for the lifetime of the instrument



Ultra rychlá HPLC



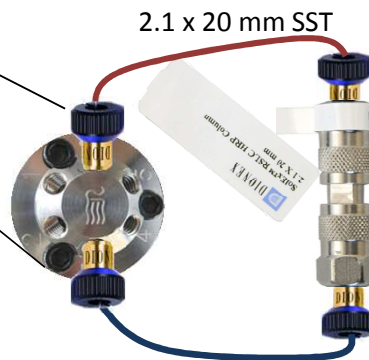
1. Triprolidin
2. Tetracain
3. Cortison
4. Dibucain
5. Furosemid

Separace **všech** analytů za **méně než 20 s**

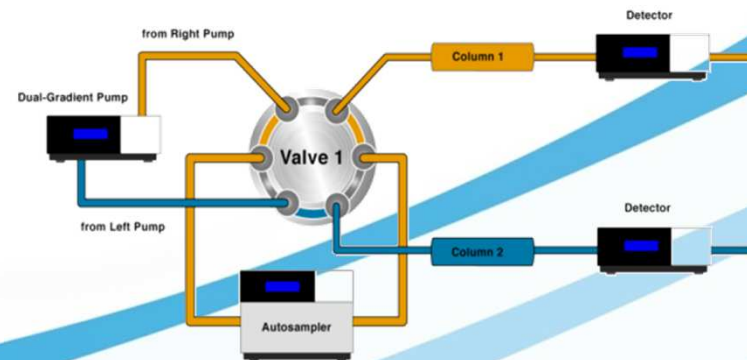


duální HPLC

- až 1000 bar při 8 mL/min
- dvě ternární gradientové pumpy

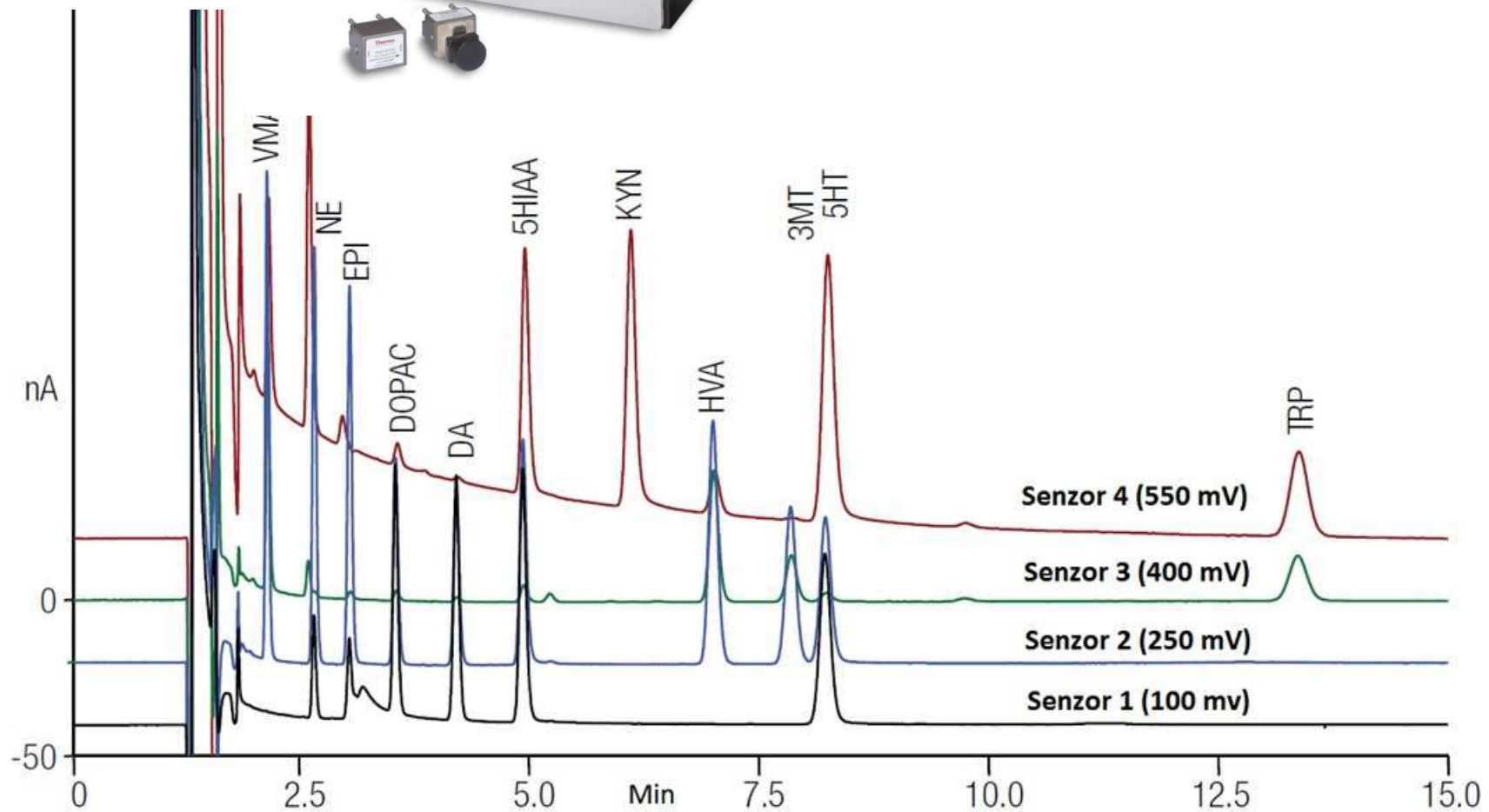


Parallel LC



NOVÉ detektory 200 Hz

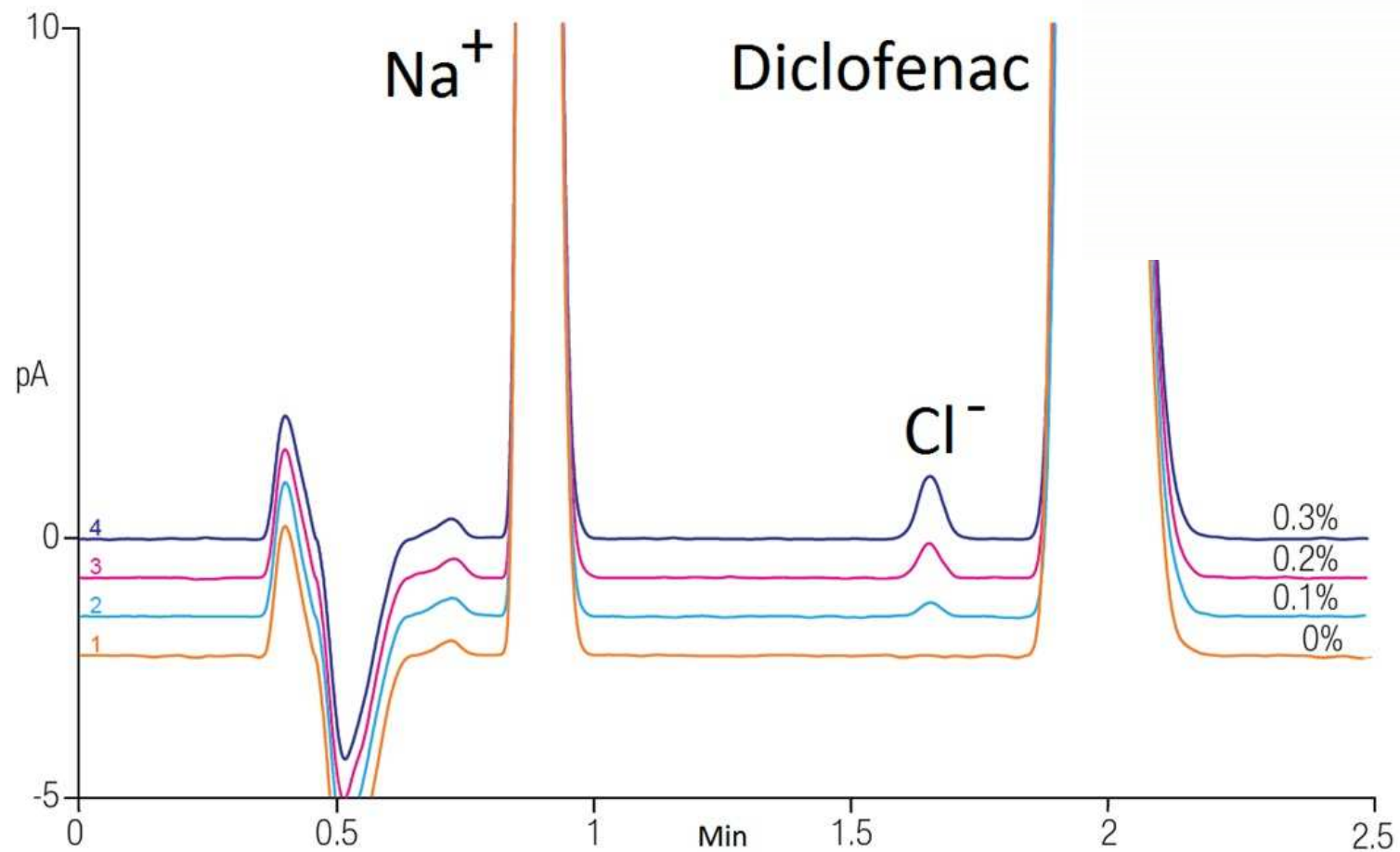
Elektrochemický COULO/AMPERO



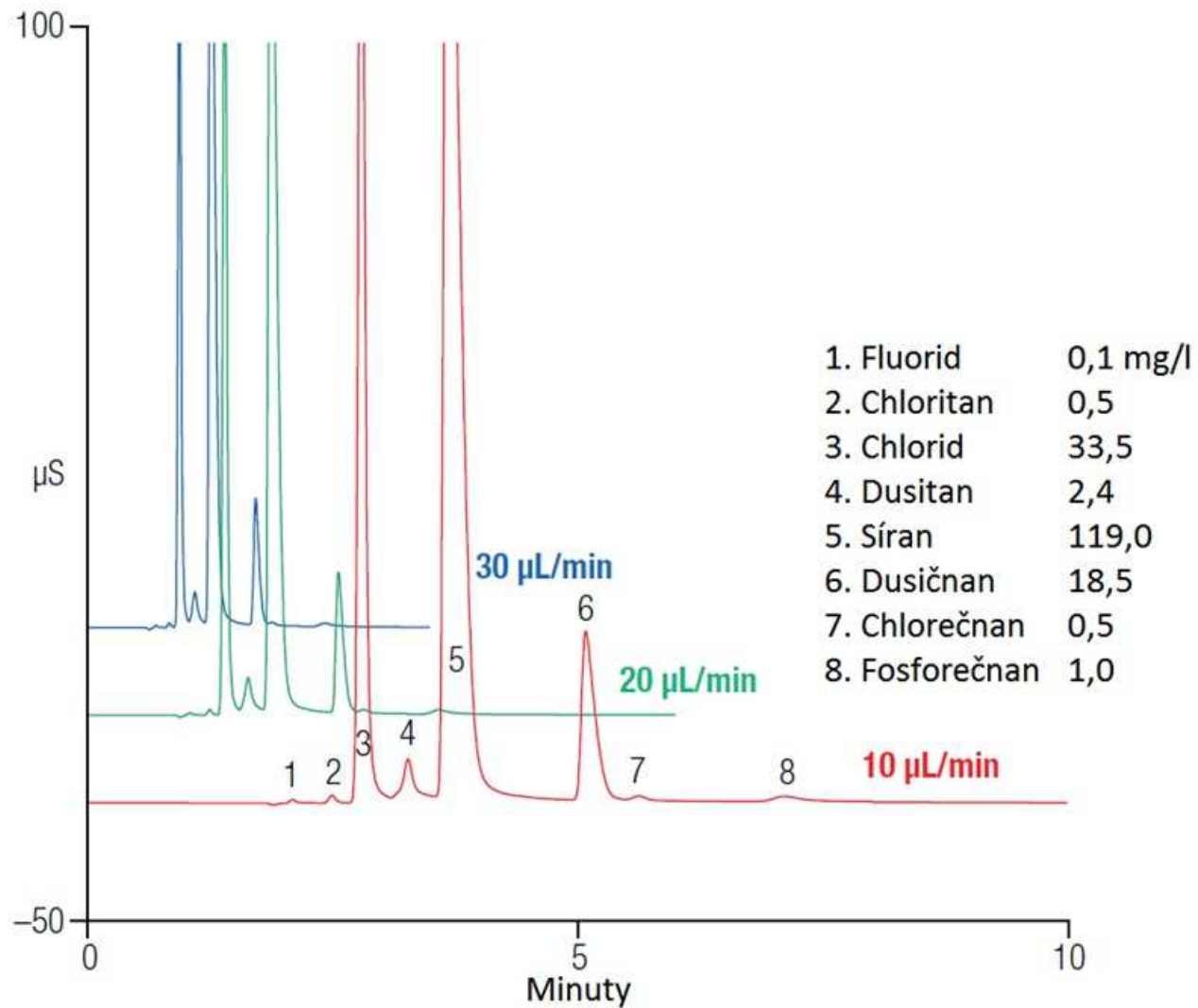
NOVÉ detektory 200 Hz



CAD CORONA VEO



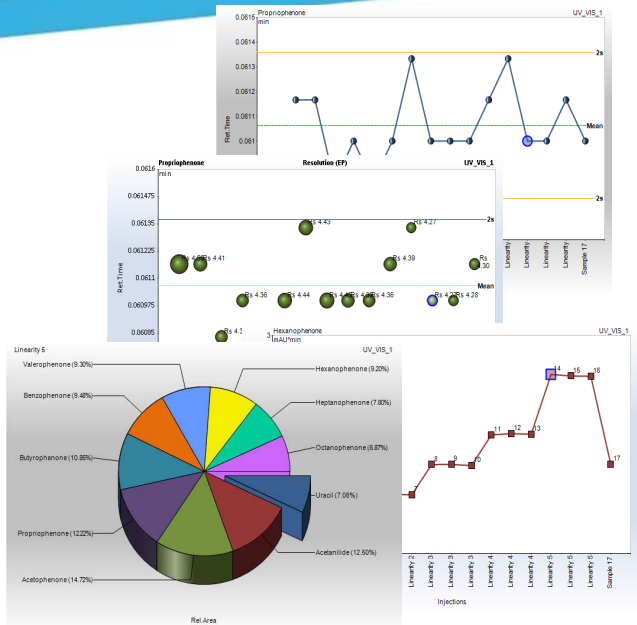
IONTOVÁ CHROMATOGRRAFIE - kapilární



Chromeleon 7.2



Chromeleon 7.2



#	UV_VIS_1	Name	Type	Position	Volume (µl)	Status
1	[Chromatogram]	Std fresh wo Caffeine, 2.209 mL/min	Standard	RB1	1.000	Finish
2	[Chromatogram]	Std fresh wo Vanillin, 2.209 mL/min	Standard	RB2	2.000	Finish
3	[Chromatogram]	Cola Zero, 2.209 mL/min	Unknown	RA2	1.000	Finish
4	[Chromatogram]	Cola light, 2.209 mL/min	Unknown	RA3	1.000	Finish
5	[Chromatogram]	Vanilla Coke, 2.209 mL/min	Unknown	RA4	1.000	Finish
6	[Chromatogram]	Cool lemon, 2.209 mL/min	Unknown	RA5	1.000	Finish
7	[Chromatogram]	Ice tea Peach, 2.209 mL/min	Unknown	RA6	1.000	Finish
8	[Chromatogram]	Red Bull, 2.209 mL/min	Unknown	RA7	1.000	Finish
9	[Chromatogram]	Std fresh wo Vanillin, 2.209 mL/min	Standard	RB2	2.000	Finish
10	[Chromatogram]	Std fresh wo Vanillin, 2.209 mL/min	Standard	RB2	2.000	Finish
11	[Chromatogram]	Standard	Standard	RB2	2.000	Finish

Electronic Report

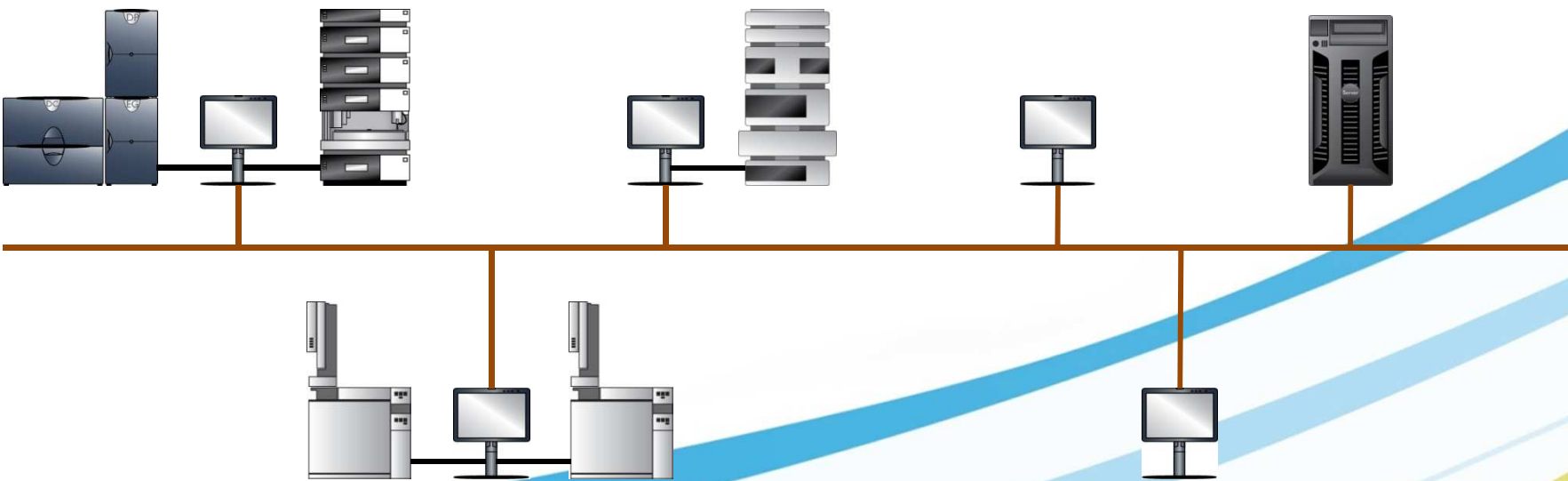
Chromatogram and Results

Injection Details

Linearity	Injection Volume (µl)	Injection Time (min)	Injection Status
Linearity 4	1.000	1.000	Success
Linearity 2	2.000	2.000	Success
Linearity 3	1.000	1.000	Success
Linearity 3	1.000	1.000	Success
Linearity 4	1.000	1.000	Success
Linearity 5	1.000	1.000	Success
Linearity 5	1.000	1.000	Success
Sample 17	1.000	1.000	Success

Peak Data

Peak Name	Retention Time (min)	Area	%Area	Height	Width	Resolution	Quality
1	1.000	10000	100.00	1000	0.100	1.000	100.00
2	2.000	20000	200.00	2000	0.100	1.000	100.00
3	3.000	30000	300.00	3000	0.100	1.000	100.00
4	4.000	40000	400.00	4000	0.100	1.000	100.00
5	5.000	50000	500.00	5000	0.100	1.000	100.00
6	6.000	60000	600.00	6000	0.100	1.000	100.00
7	7.000	70000	700.00	7000	0.100	1.000	100.00
8	8.000	80000	800.00	8000	0.100	1.000	100.00
9	9.000	90000	900.00	9000	0.100	1.000	100.00
10	10.000	100000	1000.00	10000	0.100	1.000	100.00
11	11.000	110000	1100.00	11000	0.100	1.000	100.00
12	12.000	120000	1200.00	12000	0.100	1.000	100.00
13	13.000	130000	1300.00	13000	0.100	1.000	100.00
14	14.000	140000	1400.00	14000	0.100	1.000	100.00
15	15.000	150000	1500.00	15000	0.100	1.000	100.00
16	16.000	160000	1600.00	16000	0.100	1.000	100.00
17	17.000	170000	1700.00	17000	0.100	1.000	100.00





NOVINKY A VYCHYTÁVKY V CHROMATOGRAFII THERMO SCIENTIFIC

Lukáš Plaček
Michaela Rajčanová

pragolab

ThermoFisher
SCIENTIFIC



Thermo Scientific HPLC a UHPLC kolony

- **ACCUCORE**

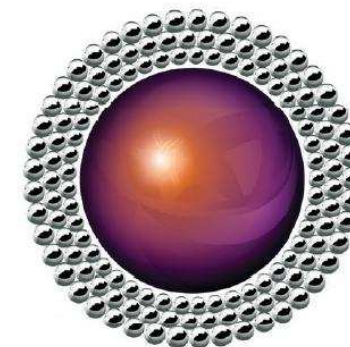
- ✓ technologie částic s pevným jádrem

- ✓ 2,6 μm

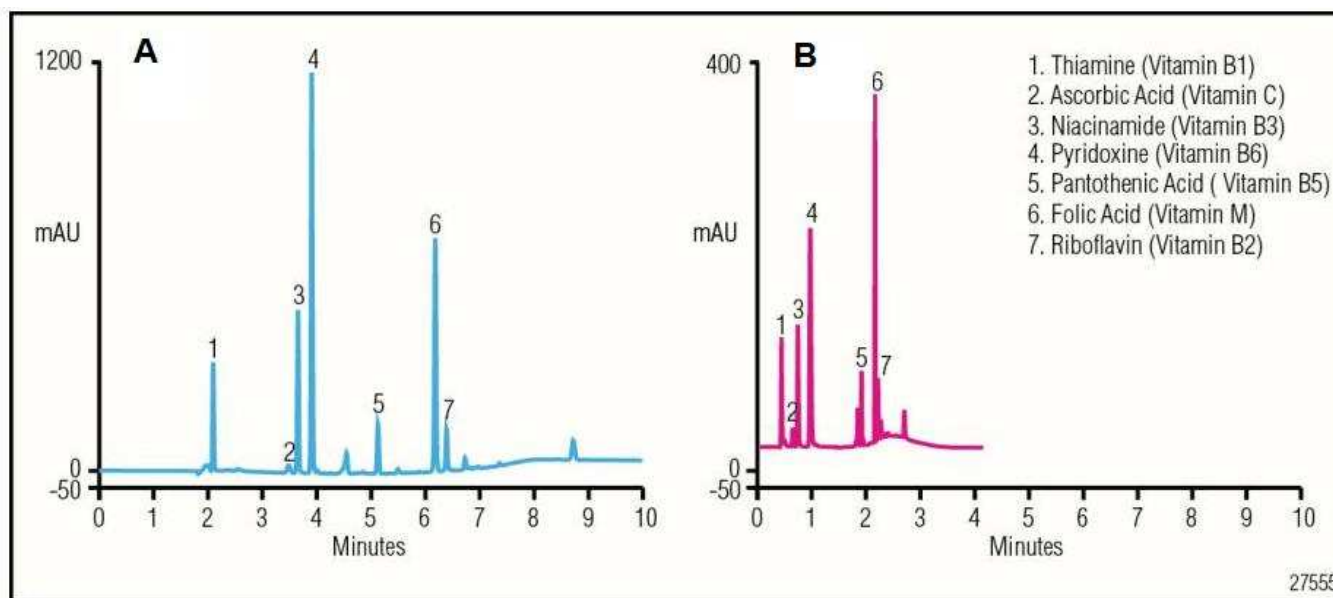
- **ACCLAIM**

- ✓ vícemodální kolony (Trinity P1, Trinity P2, Mixed-Mode HILIC-1, Mixed-Mode WAX-1, Mixed-Mode WCX-1)

- ✓ 2,2 μm

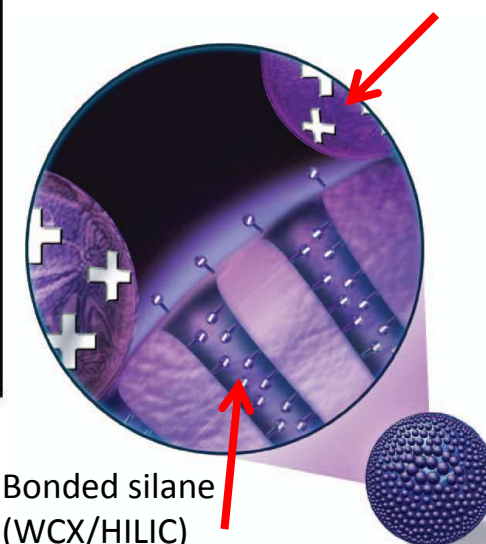


Nano-polymer bead (SAX)



Analysis of seven water-soluble vitamins under A) conventional LC and B) UHPLC conditions on Acclaim PA2, 5 μm , 250 \times 4.6 mm and Acclaim RSLC PA2, 2.2 μm , 100 \times 2.1 mm columns, respectively.

Bonded silane
(WCX/HILIC)



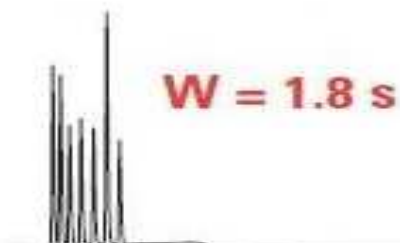
Thermo Scientific Hypersil GOLD

- Velikost částic 1,9 μm
- 175 Å, 220 m^2/g
- Druhy náplní: C4, C8, C18, Phenyl, PFP, aQ, CN, Amino, AX, SAX, HILIC, Silica
- **Výhody proti 3 a 5 μm částicím:**
 - ✓ Použití větších průtokových rychlostí
 - ✓ Kratší doba analýzy
 - ✓ Lepší rozlišení
 - ✓ Větší citlivost
 - ✓ Ušetření chemikálií



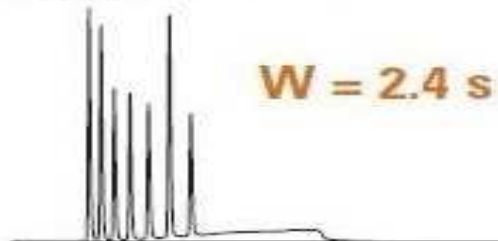
Hypersil GOLD

50 x 2.1 mm, 1.9 μm
Flow Rate: 1000 $\mu\text{L}/\text{min}$



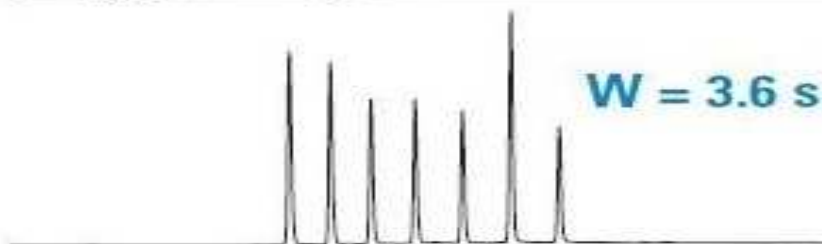
Column: Hypersil GOLD
Mobile Phase: A-H₂O, B-ACN
Gradient: 65 to 95 % B
Temperature: 40 °C
Detection: 247 nm
Injection volume: 0.2 μL
UHPLC System: Acccela

100 x 2.1 mm, 1.9 μm
Flow Rate: 1000 $\mu\text{L}/\text{min}$

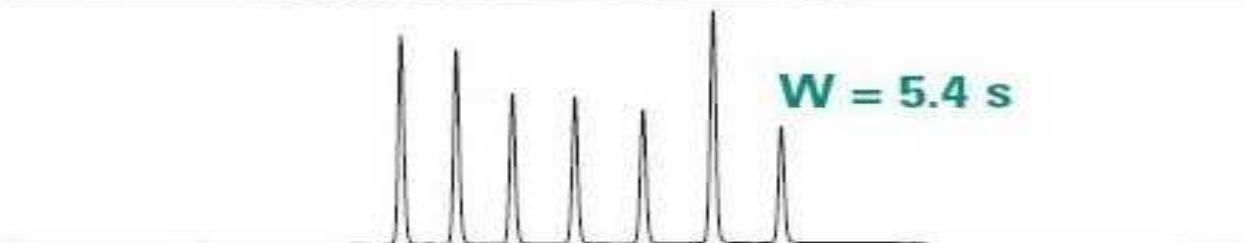


Analytes:
1. Acetophenone
2. Propiophenone
3. Butyrophenone
4. Valerophenone
5. Hexanophenone
6. Heptanophenone

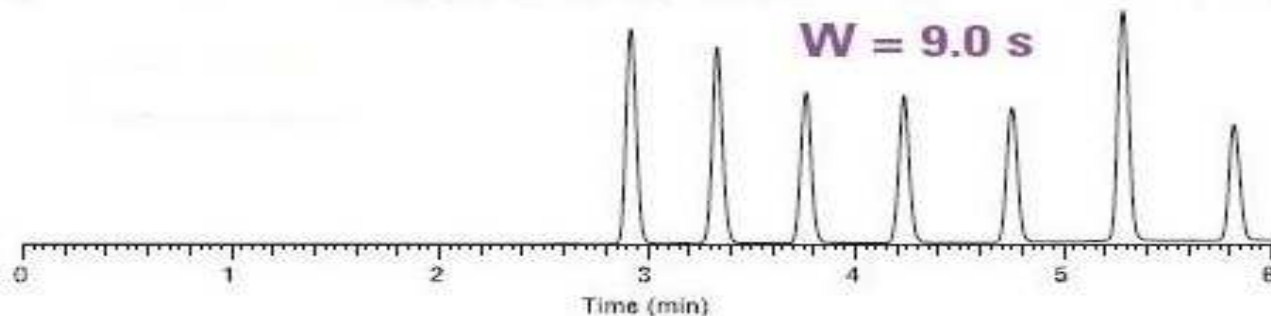
200 x 2.1 mm, 1.9 μm
Flow Rate: 600 $\mu\text{L}/\text{min}$



200 x 2.1 mm, 3 μm
Flow Rate: 400 $\mu\text{L}/\text{min}$



200 x 2.1 mm, 5 μm
Flow Rate: 250 $\mu\text{L}/\text{min}$



Thermo Scientific Synchronis

- Velikost částic 1,7 μm
- Vysoce čistý silikagel
- 100 Å, 320 m^2/g
- Druhy náplní: C18, C8, aQ, Phenyl, Amino, Silica, HILIC



BUY & TRY

VYZKOUŠEJTE

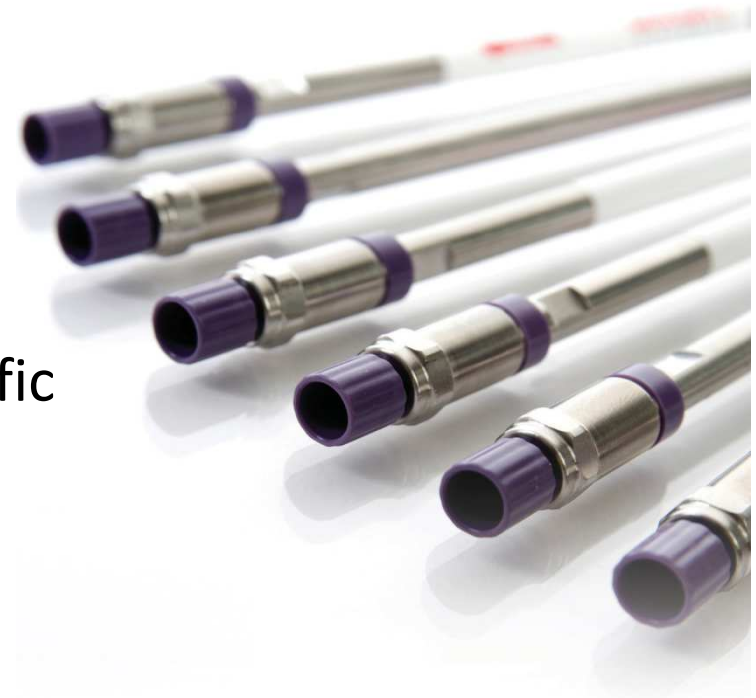
nezávně GC a LC kolony Thermo Scientific

a PŘESVĚDČTE SE,
že jsou nejlepší!

Podmínky:

- > kolonu lze vrátit do 30 dnů od doručení zásilky
- > kolona nesmí být mechanicky poškozena
- > udání důvodu vrácení kolony

Více na rajcanova@pragolab.cz





Method transfer calculator

[Reset Values](#)
[Print](#)
[Go To Isocratic Method Transfer](#)
[Ask a Technical Question](#)

Gradient Method Transfer

Original Method		
Parameter		
Column geometry	Particle size	5 µm
	Column length	150 mm
	Column ID	4.6 mm
Method conditions	Flow rate	1 ml/min
	Injection volume	10 µl
	Pressure	54 bar/psi

New Method			
Parameter		New Column Dimensions	Adjust Flow Rate
Column geometry	Particle size	1.9 µm	1.9 µm
	Column length	50 mm	50 mm
	Column ID	2.1 mm	2.1 mm
Method conditions	Flow rate	0.55 ml/min	1 ml/min
	Injection volume	0.69 µl	0.69 µl
	Pressure	328 bar/psi	0 bar/psi

System dwell volume	1.2 ml
---------------------	--------

System dwell volume	0.07 ml	0.07 ml
---------------------	---------	---------

Gradient	Use 6 steps	Time	%A	%B
Initial Conditions		0	100	0
Step 2 (initial hold)		0	95	5
Step 3		21	5	95
Step 4		23	5	95
Step 5		23.1	95	5
Step 6		25	95	5

Gradient	Time	%A	%B	Time	%A	%B
Initial Conditions	0	100	0	0	100	0
Step 2 (initial hold)	-0.1	95	5	-0.1	95	5
Step 3	2.7	5	95	1.5	5	95
Step 4	2.9	5	95	1.6	5	95
Step 5	2.9	95	5	1.6	95	5
Step 6	3.2	95	5	2.5	95	5

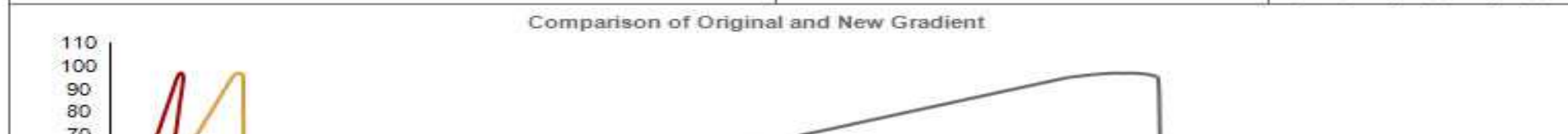
Equilibration time	17 min
--------------------	--------

Equilibration time	2 min	1 min
--------------------	-------	-------

Comparisons

■ Existing method
 ■ New Column Dimensions
 ■ Adjust Flow Rate

Existing method vs. New Column Speed (unit) Pressure (unit)	Existing method vs. Variable Flow Speed (unit) Pressure (unit)	Time Saved Existing Method (minutes) New Column (minutes) Variable Flow (minutes)	Solvent Comparison Existing Method (ml) New Column (ml) Variable Flow (ml)
--	---	---	--



Virtuoso Vial Identification System

- možnost **označení vialek** pomocí textu, čísel, barkódů, grafických prvků
- označení vialky během **5 sekund**
- usnadňuje **identifikaci** vialek
- označení vialek je **odolné** běžným laboratorním rozpouštědlům, rozmazání nebo vymazání
- eliminuje chyby při manuálním popisování vialek
- snadné ovládání a programování pomocí dotykového displeje



SPOTŘEBNÍ MATERIÁL



Contents

Search



LC Columns and Accessories

Section Contents

Introduction	4-001	LC Accessories	4-158
Column Selection	4-002	LC Equipment	4-186
Column Protection	4-016	LC Reagents	4-193
Columns for Fast and Analytical LC	4-022	LC and LC-MS Instrument Parts	4-209
Columns for Biomolecules	4-110	Technical Information	4-231

Featured Products

Accucore Columns

Ultimate core performance - speed and selectivity combined

➤ [PAGE 4-042](#)



Synchronis Columns

Consistent, reproducible separations, column after column, time after time

➤ [PAGE 4-074](#)



Hypersil GOLD Columns

Outstanding peak shape for your separations

➤ [PAGE 4-024](#)



MABPac Columns

Unrivalled resolution and efficiency in the analysis of protein variants

➤ [PAGE 4-126](#)



Acclaim PepMap Columns

The standard for peptide separations in proteomics

➤ [PAGE 4-149](#)



Viper Connectors

Simple, dead volume free plumbing of HPLC and UHPLC systems

➤ [PAGE 4-158](#)

← **Table of Contents** ✕

- Introduction
- Column Selection
- Column Protection
- Columns for Fast and Analytical LC
- Application Specific LC Columns
- Columns for Biomolecules
- LC Accessories
- LC Equipment
- LC Reagents
- LC Instrument Parts
- Technical Information

Contents
Search

Section Contents

Introduction	4-001	LC Accessories	4-158
Column Selection	4-002	LC Equipment	4-186
Column Protection	4-016	LC Reagents	4-193
Columns for Fast and Analytical LC	4-022	LC and LC-MS Instrument Parts	4-209
Columns for Biomolecules	4-110	Technical Information	4-231

LC Columns and Accessories

Products

Synchronis Columns

Consistent, reproducible separations; column after column, time after time

➤➤ [PAGE 4-074](#)



Hypersil GOLD Columns

Outstanding peak shape for your separations

➤➤ [PAGE 4-024](#)





Thermo Scientific
Chromatography Columns
and Consumables 2014-2015

Your world of
chromatography

Thermo
SCIENTIFIC

Nový katalog CHROMATOGRAFICKÉ KOLONY A JINÝ SPOTŘEBNÍ MATERIÁL 2014-2015

Katalog v tištěné podobě Vám rádi
zašleme!

Nevíte si rady s aplikací?

Nevíte, jakou kolonu vybrat?

Napište na:
rajcanova@pragolab.cz