

**40** years of  
**INNOVATION**



**ThermoFisher**  
S C I E N T I F I C

## 离子色谱新产品介绍

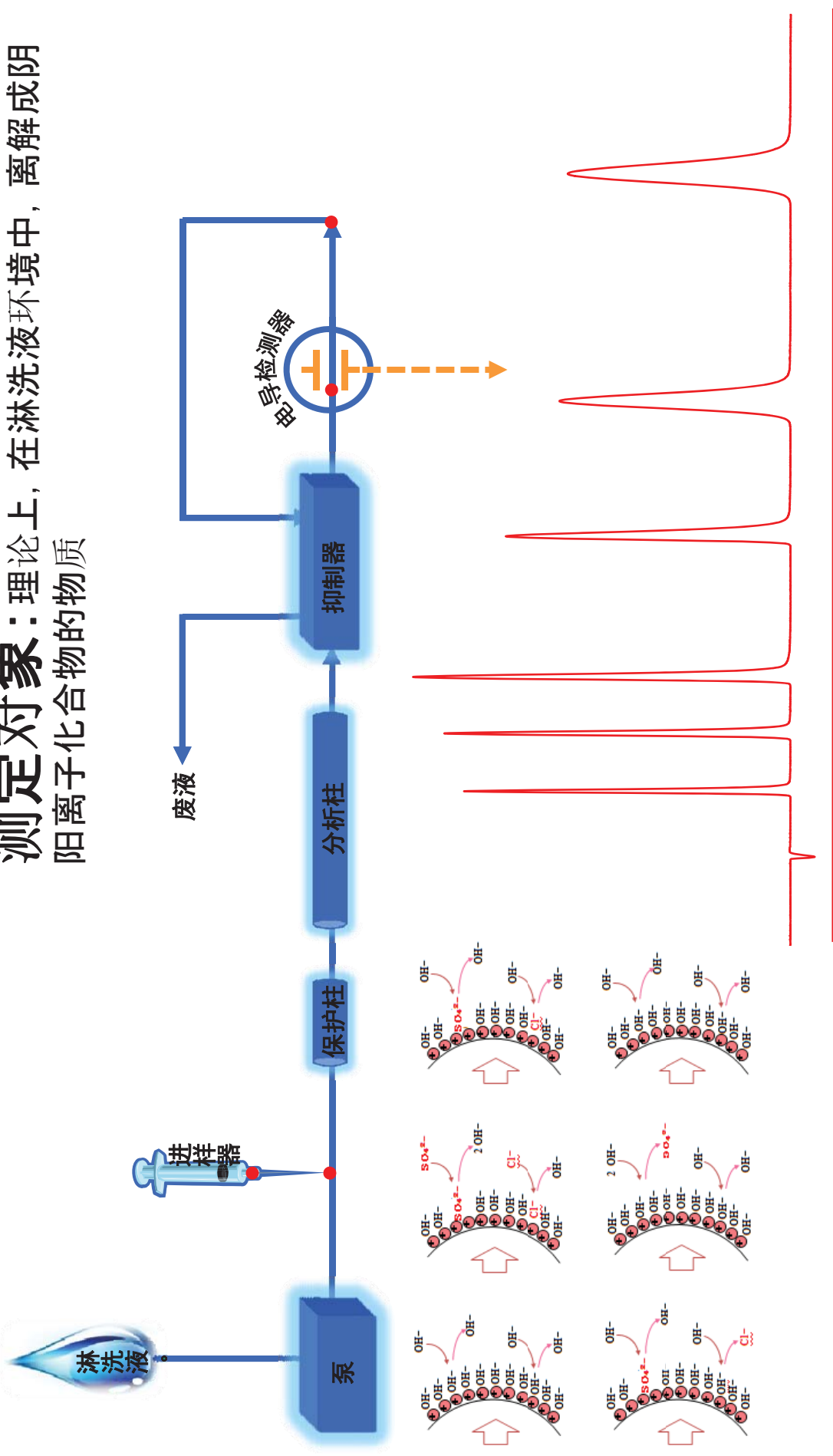
**禹重科技** ÜZONGLAB  
成分分析仪器 | 表面测试仪器 | 样品前处理仪器

The world leader in serving science

- **离子色谱技术发展**
  1. 离子色谱技术发展趋势
  2. 高压离子色谱(HPIC)技术
- **真正懂您的分析技术——HPIC integration**
  1. 离子色谱新产品特色介绍
  2. 变色龙软件新性能介绍
- **离子色谱新产品典型新应用**
  1. HPIC在环境领域中的典型应用
  2. HPIC在食品领域中的典型应用
  3. HPIC在化工领域中的典型应用
  4. HPIC在医药分析中的典型应用

# 离子色谱系统流程

**测定对象：**理论上，在淋洗液环境中，离解成阴  
阳离子化合物的物质



# 突飞猛进的离子色谱发展



第三代抑制器——微膜型抑制器 (MMS)

加入 **ThermoFisher**,  
开启IC仪器联用新纪元

- > CD
- > UV
- > ED
- > QD
- > MS
- > ICP/MS
- > AFS
- > FLD
- > ICP

RFIC-EG



1975

1985

1991

1998

2003

2010

2011

2016

H. Small发表了第一篇抑制型离子色谱的文章，同年Dionex公司世界第一台商品化离子色谱问世。



第一台毛细管离子色谱仪



HPIC 高压离子色谱



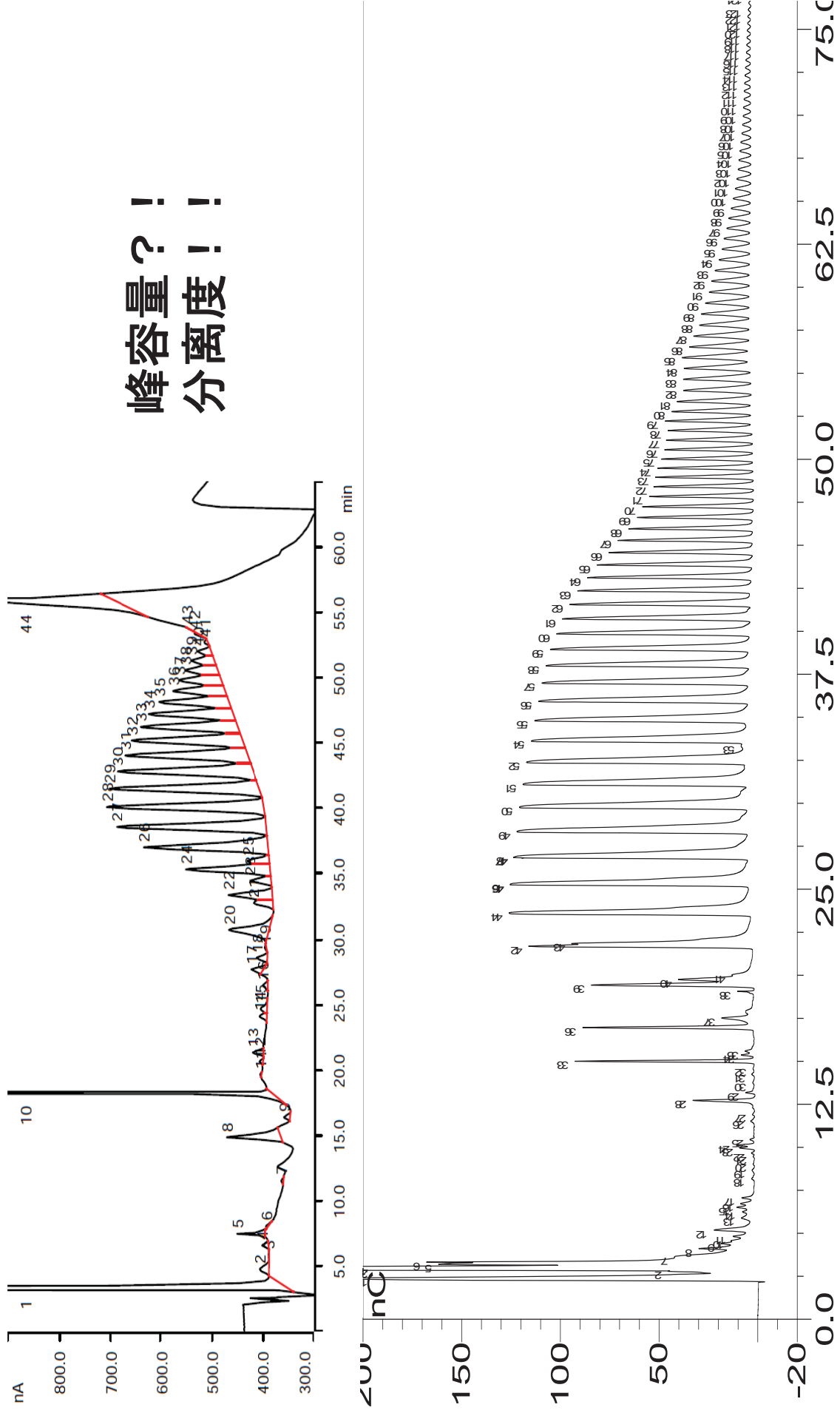
第四代抑制器——自动电解再生微膜型抑制器



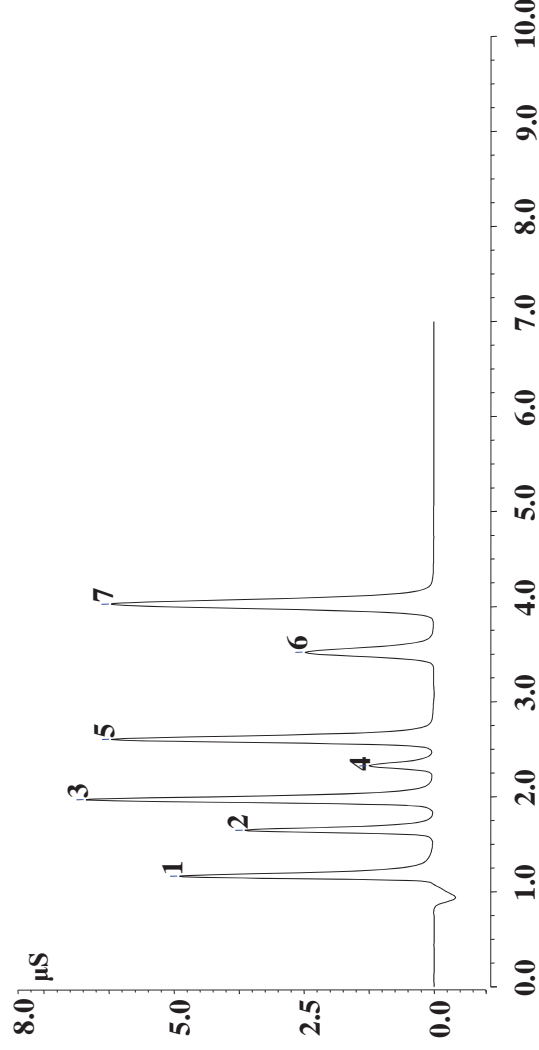
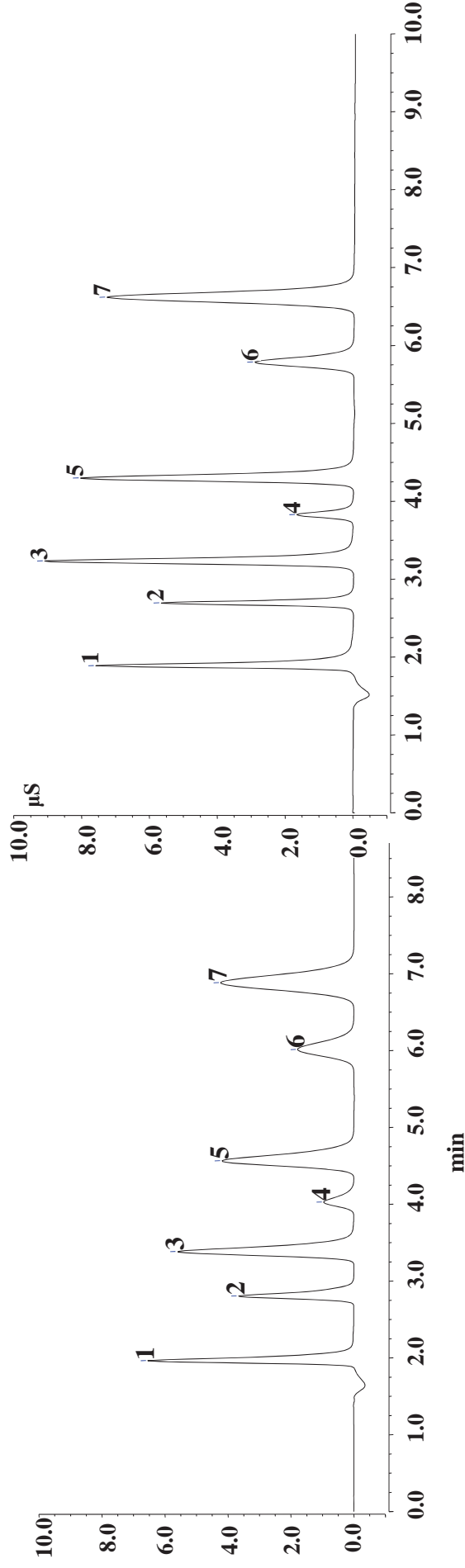
仪器：更可靠 - 更方便 - 性能更优良 - 更高效 - 更快速



# 离子色谱发展需求

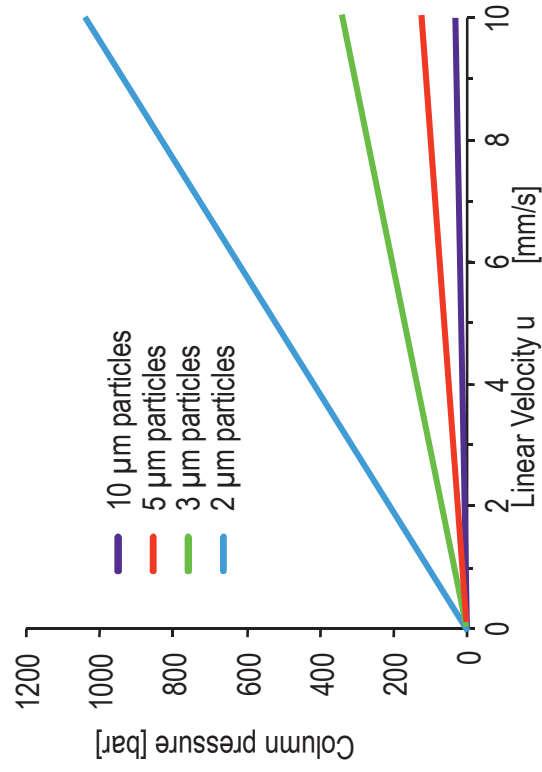
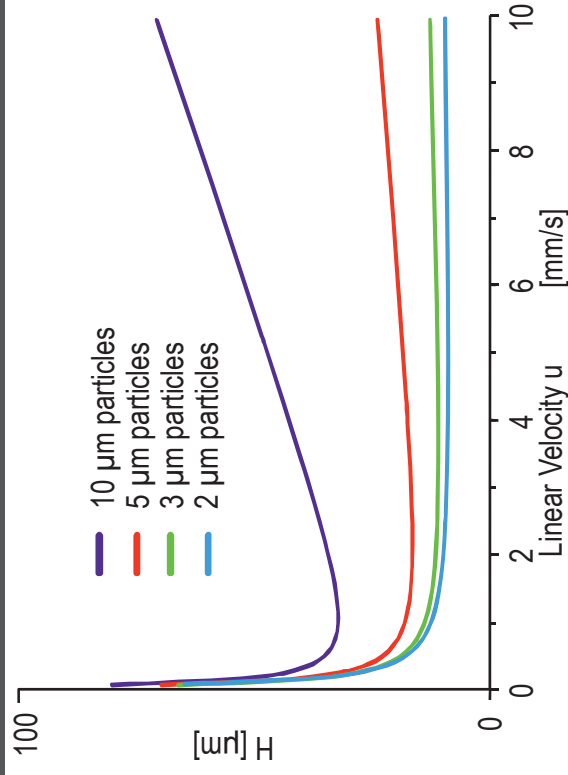
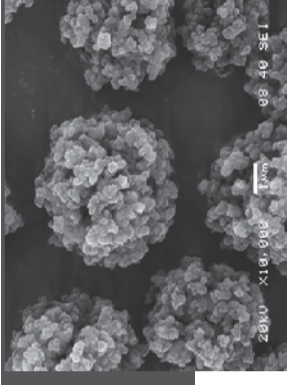


# 离子色谱发展需求

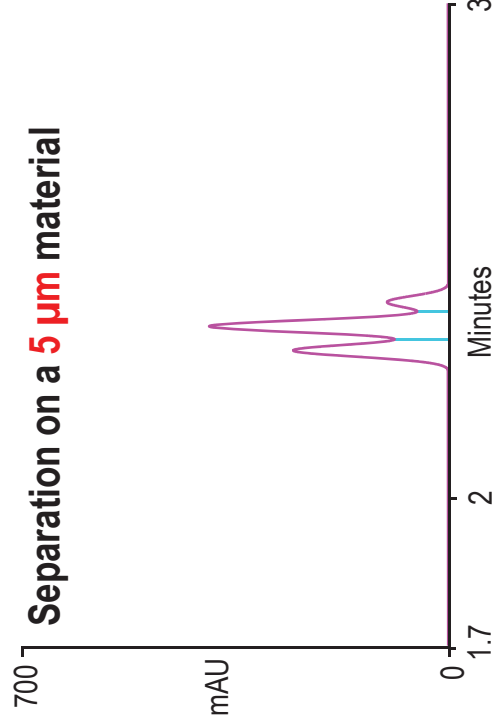


**分析速度??  
分离度??**

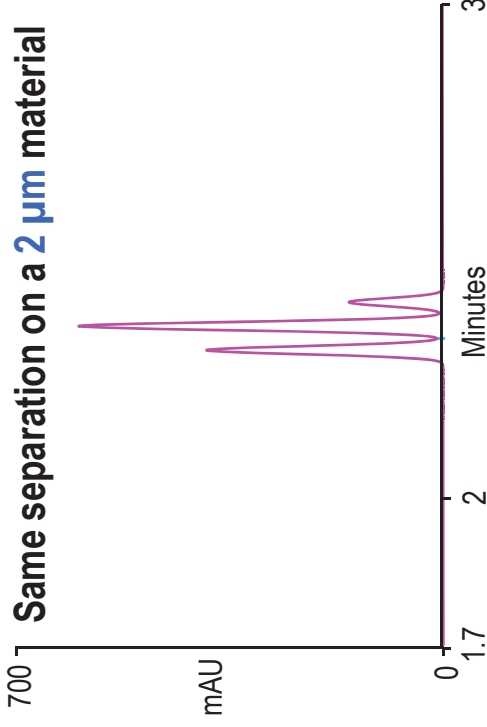
# 经典踏板理论和Van deemter曲线



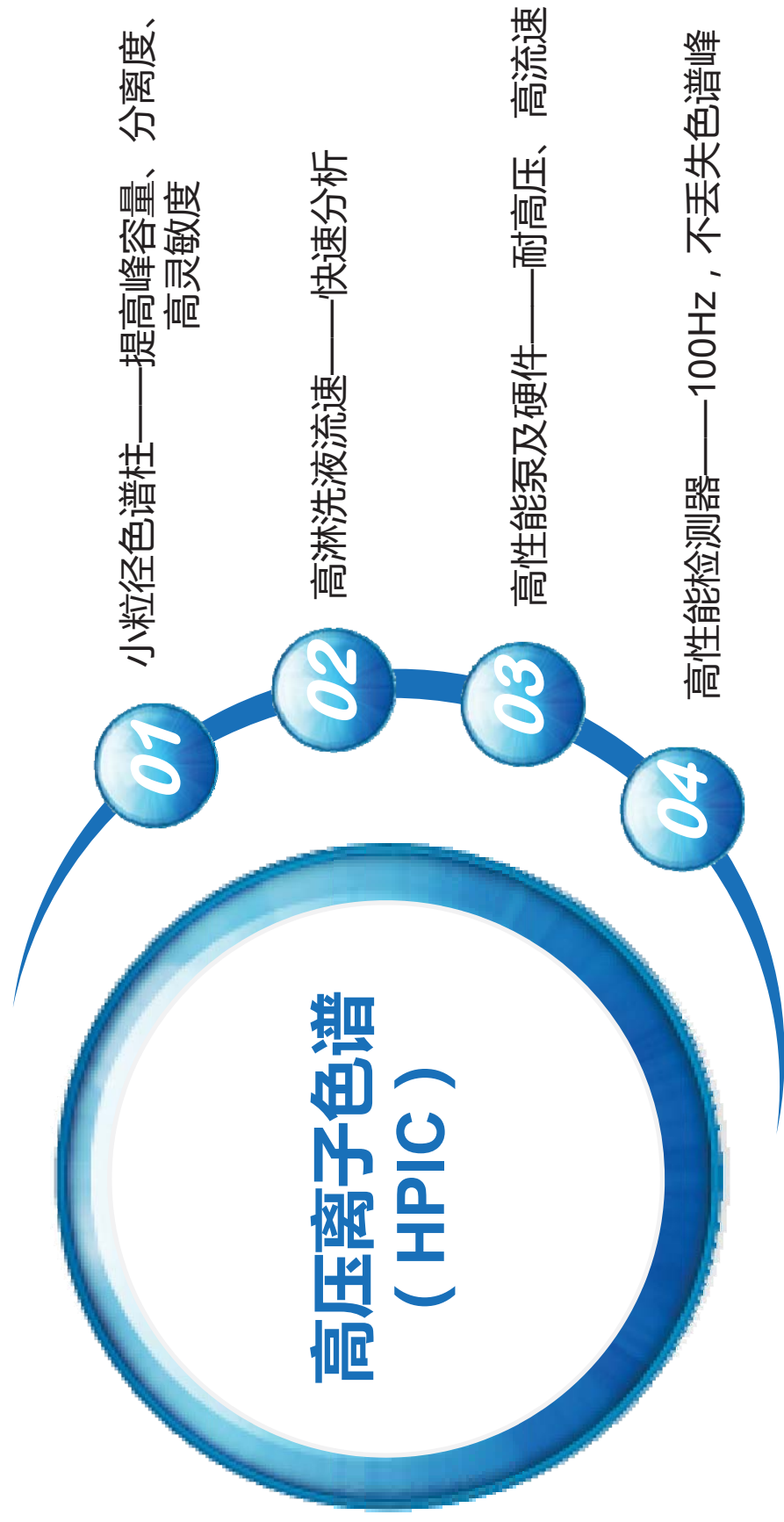
Separation on a **5  $\mu\text{m}$**  material



Same separation on a **2  $\mu\text{m}$**  material



# 离子色谱发展需求



# Dionex Integrion



确保  
全面通用性和高效性  
离子色谱分析  
全面广泛的应用和解决  
方案  
以及  
**交互式安全稳定特性**  
可以帮助适应不断变化的需求，  
同时保持实验室完美的运行

- **离子色谱技术发展**
  1. 离子色谱技术发展趋势
  2. 高压离子色谱(HPIC)技术
- **真正懂您的分析技术——HPIC integration**
  1. 离子色谱新产品特色介绍
  2. 变色龙软件新性能介绍
- **离子色谱新产品典型新应用**
  1. HPIC在环境领域中的典型应用
  2. HPIC在食品领域中的典型应用
  3. HPIC在化工领域中的典型应用
  4. HPIC在医药分析中的典型应用

# Integrion RFIC



- 隐藏非常用管路，初学者易掌握流路的正确连接方式，避免误操作。
- 流路设计更为合理，减少管路长度，缩小死体积。





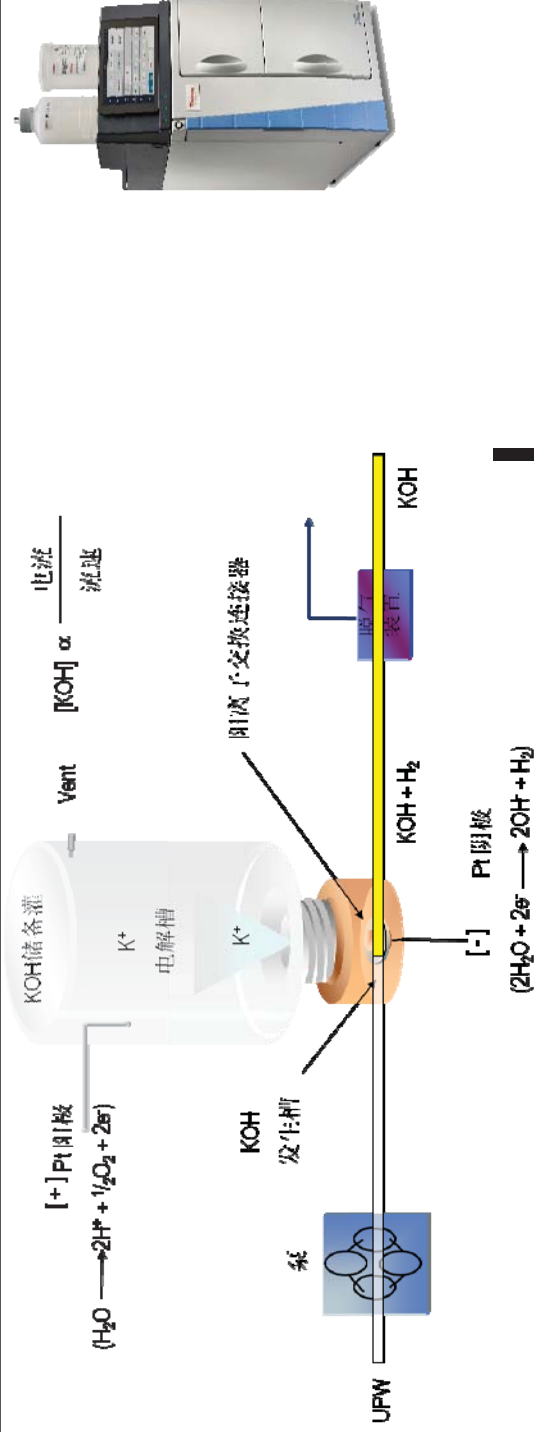
## 最好的离子色谱泵

### 使用与ICS 5000+相同的高性能高压等度泵:

- 1) 耐压41MPa (6000psi) ;
- 2) 标准泵头流速范围0-10 ml/min, 通过更换泵头实现0-22.4 ml/min;
- 3) 完全兼容4 $\mu$ m色谱柱, 提高系统分离能力; 缩短分析时间, 极大提高样品通量, 从而提高实验室的生产力;
- 4) 可选配自动清洗模块, 自动清洗维护泵头和密封圈, 减少配件磨损和维护, 提高色谱泵使用寿命。



# 淋洗液自动发生器



减小了手工配制淋洗液的精度误差

淋洗液无污染，提高了灵敏度

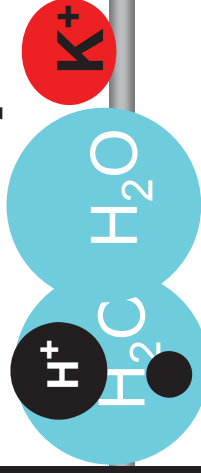
提高了分析方法的重现性

可运行等度和梯度分离

降低泵的维护费用

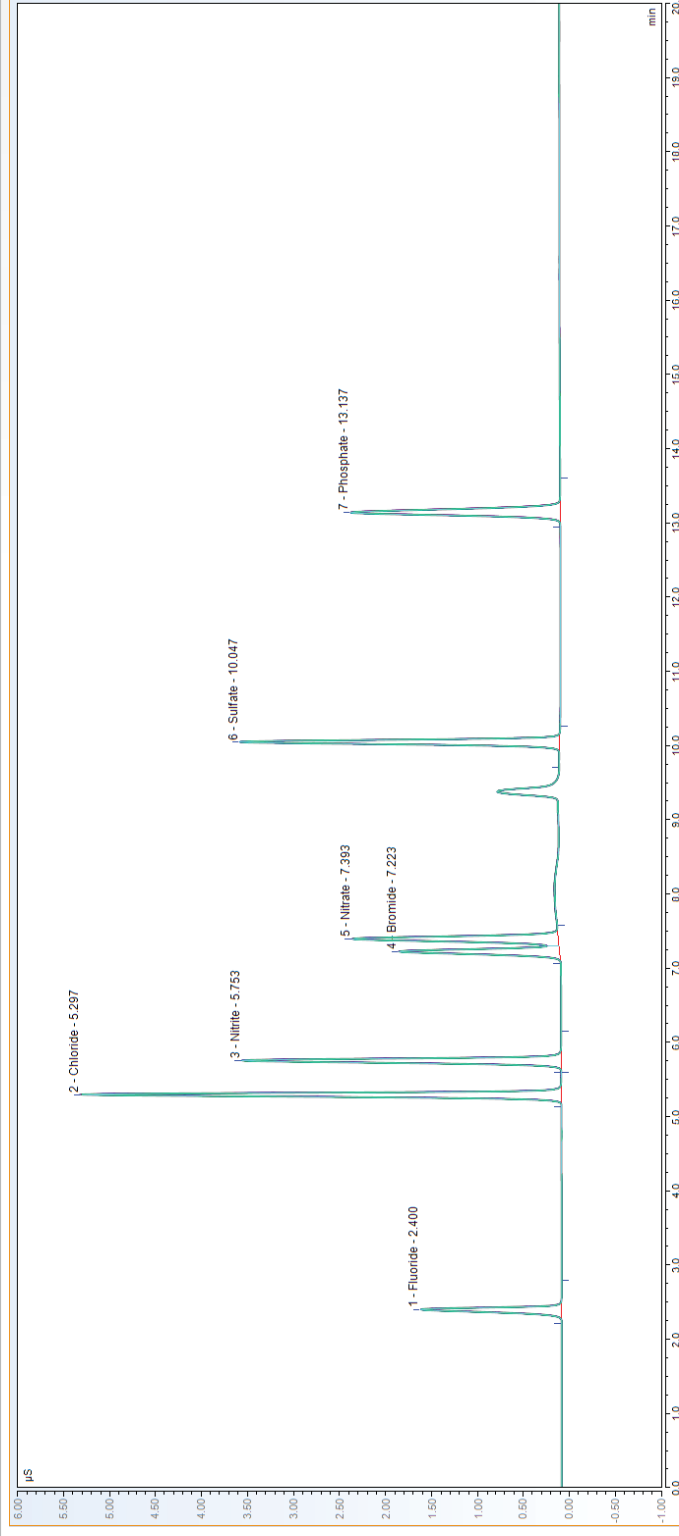
减少有害化学品的接触

阳极 +



阴极 -

# AS11 4mm 梯度重现性(n=30)



	F <sup>-</sup>	Cl <sup>-</sup>	NO <sub>2</sub> <sup>-</sup>	SO <sub>4</sub> <sup>2-</sup>	Br <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup>
面积 (µS·min)	0.110	0.324	0.236	0.137	0.242	0.182	0.217
% RSD 面积	0.059	0.075	0.075	0.130	0.061	0.101	0.049
保留时间(min)	2.400	5.297	5.755	7.223	10.047	7.394	13.139
%RSD 保留时间	0.060	0.020	0.029	0.021	0.014	0.023	0.022

## Dionex Integrion:温控方式的变化

Integrion采用的是**强制风加热柱温箱**，无需插入特殊的温控箱，就可以满足色谱柱实际应用、温度梯度优化、淋洗液和样品预热的需求，从而实现更出色的稳定性。

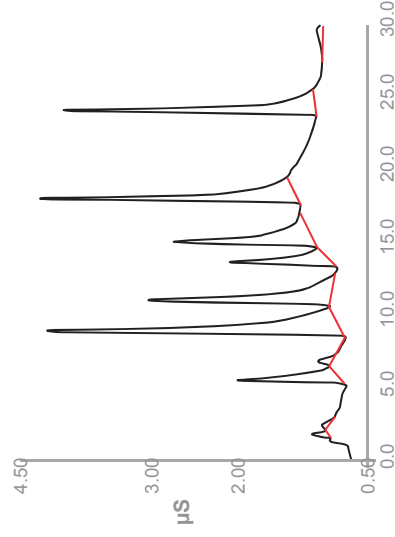
Integrion还有**检测器恒温控制功能**，以确保无论实验室环境怎样变化，检测器的响应是稳定一致的，并且具有较低的系统噪音。



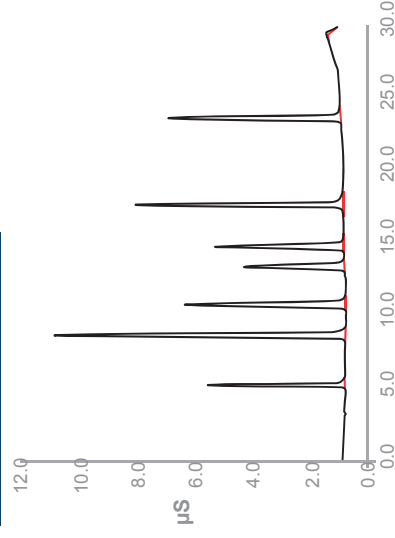
## IC Viper 管路金属支架

- 预先切好、模压的Viper 管路和接头，接头不会沿着管路脱落；
- 100% 无金属流路，无污染；
- 始终如一的小死体积(几乎为零) 连接，可获得最佳的色谱性能；
- 用手指紧固，单手操作易连接，无需其他工具，方便使用；
- 可耐受6000psi高压，完美支持HPIC高压离子色谱。

Poor Tubing Connections



Viper Connections



# 检测器更多元化





**ThermoFisher**  
S C I E N T I F I C

软件操作的便捷性

The world leader in serving science



# Integrion ePanel 操作便捷

Date	Time	Retention Time	Device	Message
11/12/2015	12:07:33 PM -08:00		Pump_E	User Jay Lorch (jlorc...)
11/12/2015	12:07:17 PM -08:00		Pump_E	Connection establis...
11/12/2015	12:07:17 PM -08:00		Pump_E	



# 离子色谱故障诊断知识库

## 故障诊断知识库



**知识库** 是专为帮助用户  
判断什么发生了错误和  
如何纠正问题而设计的

---

循序渐进的引导

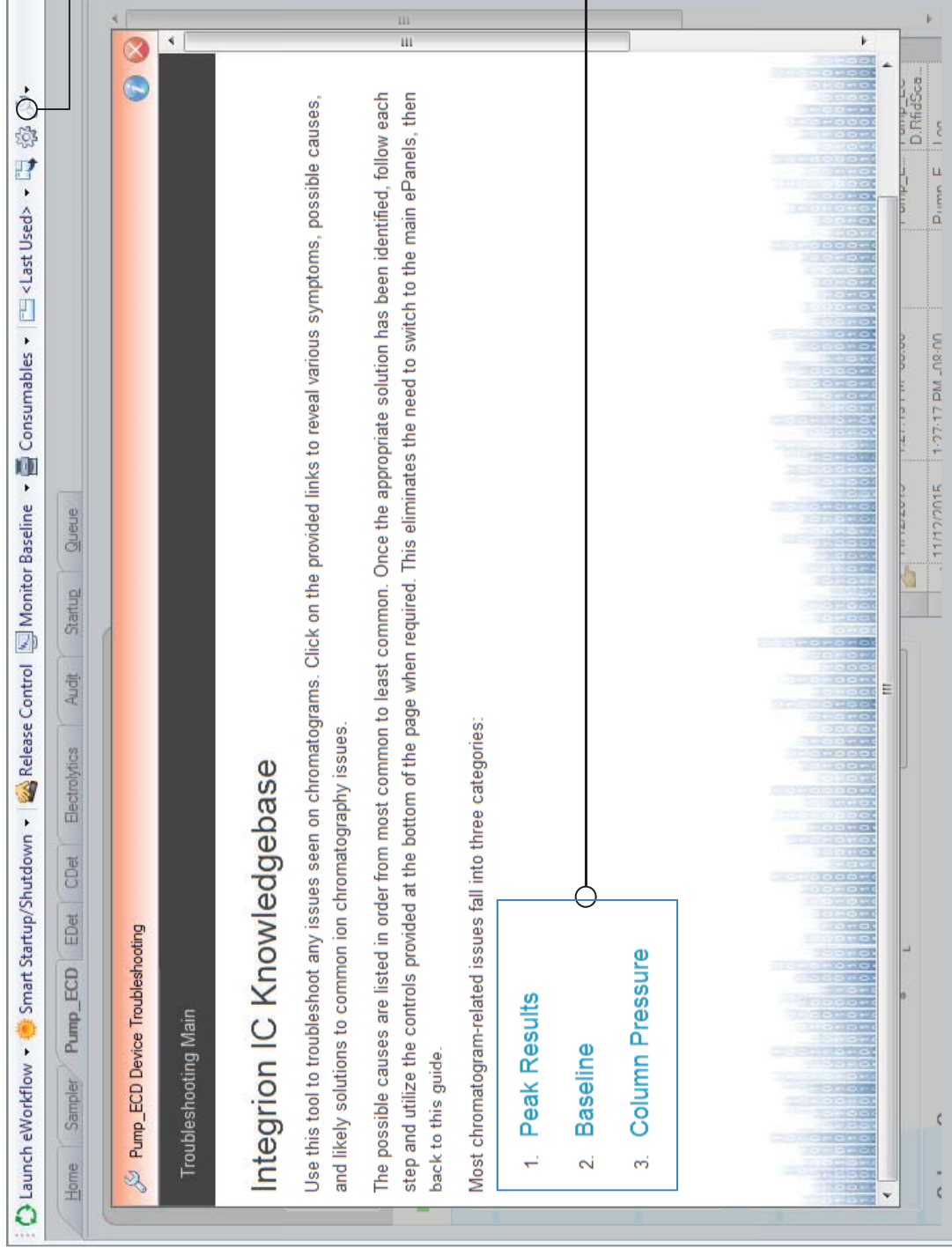
---

自动控制切换

---

视频指导

# 故障诊断知识库



很容易在控制台访问

主页为用户提供三个色谱症状类别(链接)

# 故障诊断知识库

**Peak Results**

Peak results can be adversely affected by sample, eluent, column or system problems. These can cause changes in peak shape, differences between runs and the appearance of unaccounted for peaks:

**Shape**

Peaks appear to be missshapen. This can include peak fronting, tailing, broadening, non-Gaussian shapes, split peaks, etc.

**Figure 1: Peak Fronting**

**Figure 2: Peak Tailing**

**Figure 3: Peak Splitting**

**Reproducibility**

Changes in retention time or peak area across injections.

Pump_ECD	11/17/2015	1:27:17 PM	_08_00	Pump E	1.00
D.Rfid:Ca				Pump F	1.00

为所选择的类别  
提供可能症状的  
清晰和有代表性的  
图像

**Pump\_ECD Device Troubleshooting**

### Incorrect column (analyte/stationary phase polarity mismatch)

Strongly polar species, such as iodide, thiosulfate, perchlorate, long-chain alkyl carboxyl or sulfonic acids, and long-chain alkyl amines are not well suited to columns with medium to high hydrophobicity. If the peaks of non-polar species, such as sodium, chloride or sulfate, are symmetric, but polar species are tailing, an alternative eluent or column should be tried

- Add a small amount of solvent (methanol or acetonitrile) to the eluent.
  - 5 - 10% methanol or acetonitrile can improve peak shapes of polar species significantly.
- Addition of solvents may not be compatible with electrolytic components, such as Eluent Generator Cartridges and Suppressors; check the user manuals of all electrolytic components before proceeding with the addition of solvents to the eluent.
- Replace column with an ultra-low hydrophobicity column, such as the Dionex IonPac AS16, IonPac AS20 or IonPac CS17 (see [Replacing a Column](#))
  - Ultra-low hydrophobicity columns do not require solvents to provide symmetric peak shapes with polar species.

**More...**

**Pump**

Flow: 0.500 [ml/min] (Setpoint: 0.00 [mM]) Concentration: 0.00  
Pressure: 0 [psij] Cartridge Type: EGC MSA

**EGC** Mode Off

Buttons: On, Prime, Off

按照最可能解决问题顺序排列的解决方案

额外的链接, 当需要的时候可以提供更多的指导...

比较少见的问题列在“More...”之下 点击展开



**Pump\_ECD Device Troubleshooting**

### Incorrect column (analyte/stationary phase polarity mismatch)

Strongly polar species, such as iodide, thiosulfate, perchlorate, thiosulfate, long-chain alkyl carboxyl or sulfonic acids, and long-chain alkyl amines are not well suited to columns with medium to high hydrophobicity. If the peaks of non-polar species, such as sodium, chloride or sulfate, are symmetric, but polar species are tailing, an alternative eluent or column should be tried

- Add a small amount of solvent (methanol or acetonitrile) to the eluent.
  - 5 - 10% methanol or acetonitrile can improve peak shapes of polar species significantly.
- Addition of solvents may not be compatible with electrolytic components, such as Eluent Generator Cartridges and Suppressors; check the user manuals of all electrolytic components before proceeding with the addition of solvents to the eluent.
- Replace column with an ultra-low hydrophobicity column, such as the Dionex IonPac AS16, IonPac AS20 or IonPac CS17 (see [Replacing a Column](#)).
  - Ultra-low hydrophobicity columns do not require solvents to provide symmetric peak shapes with polar species.

More...

**Pump**

Flow: 0.500 [ml/min] (Setpoint: 0.500 [ml/min])

Pressure: 0 [psi]

**EGC**

Mode: Off

Concentration: 0.00

Cartridge Type: EGC MSA

Buttons: On, Prime, Off

Navigation: Home, Sampler, Pump\_ECD, EDet, CDet, Electrolytics, Audit, Startup, Queue

System: Release Control, Monitor-Baseline, Consumables, <Last Used>

Footer: 11/17/2015 1:27:17 PM -08:00

任何程序所需的  
控制都会自动显  
示



# 耗材安装指南

# 耗材安装指南

## 简单安装

指南是为简化离子色谱耗材安装而设计的

## 自动控制切换

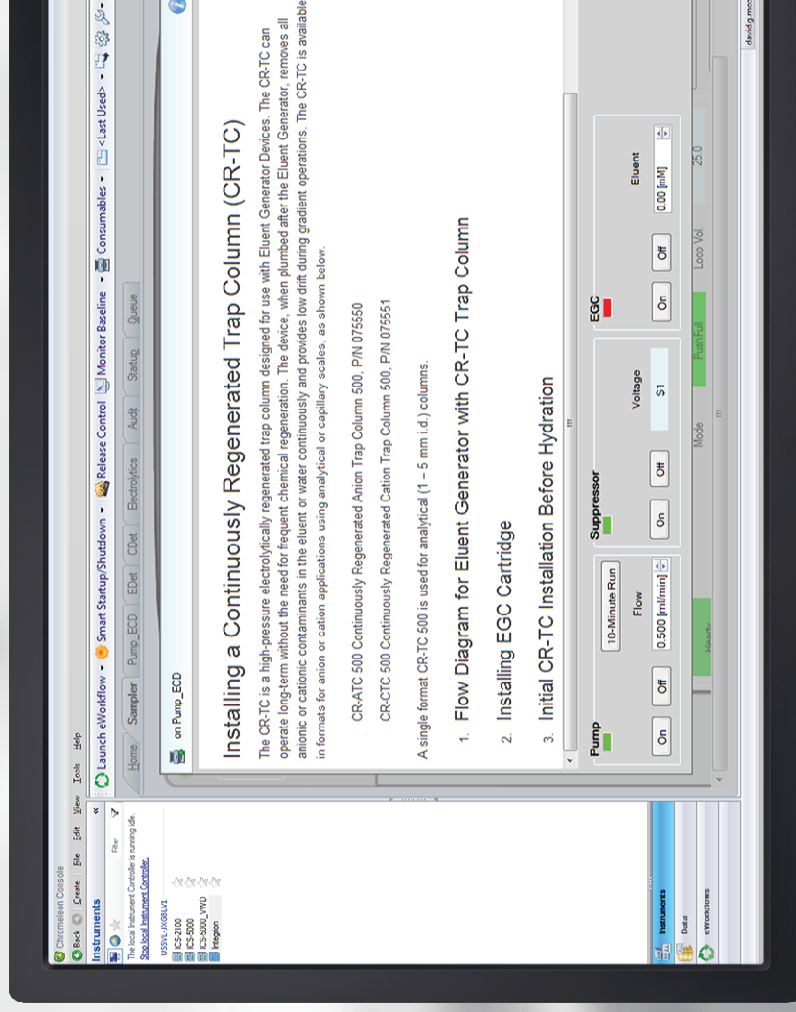
任何程序所需的控制都会自动显示

## 循序渐进的导向

每一个类型的耗材都有详细的循序渐进的导向

## 视频指导

每个指南还包括一个安装视频显示如何安装指定的耗材



# 耗材安装指南

The screenshot displays the eWorkflow software interface for the Pump\_ECD system. The top navigation bar includes options like 'Launch eWorkflow', 'Smart Startup/Shutdown', 'Release Control', 'Monitor Baseline', and 'Autogenerated'. The main control panel features several sections:

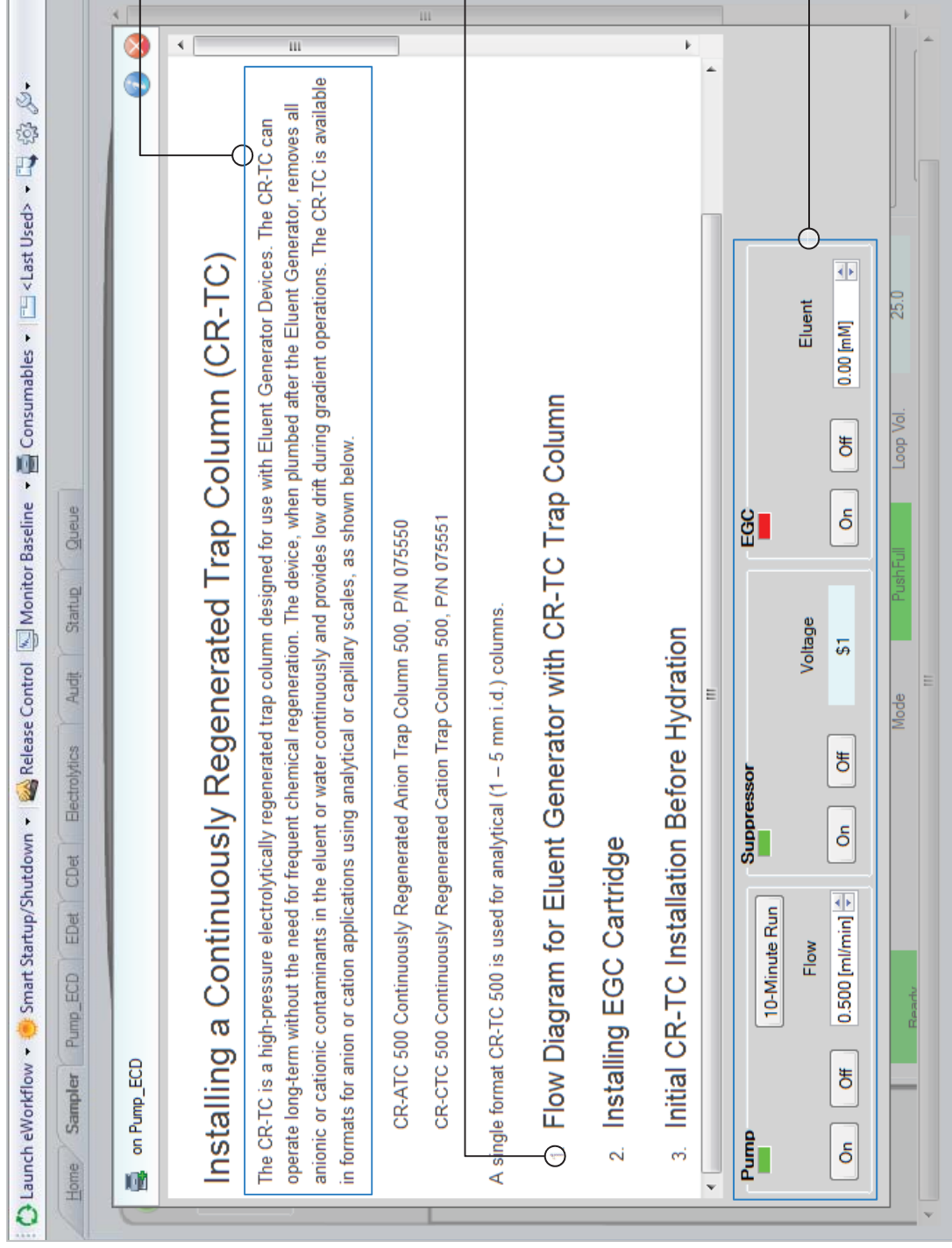
- ED (Electrodeless Detector):** Shows ED 0.000 nC and ED Total 400.000 µS.
- CR-TC (Concentration Response Time Control):** Includes 'Concentration' set to 0.00 [mM] and 'Suppressor' controls (On/Off).
- Pump:** Displays 'Flow' at 0.500 [ml/min] and 'Pressure' at 0 [psi]. It also has 'Upper Limit' (3000.00 [psi]) and 'Lower Limit' (200.00 [psi]) settings, along with 'Connect', 'Disconnect', 'Continue', and 'Prime' buttons.
- Valves:** Shows 'Inj Valve' and 'HP Valve' (A) as 'Closed', and 'LP Valve 1' and 'LP Valve 2' as 'Closed'. A schematic diagram of the valve assembly is also visible.

Below the control panel is a large data table with columns for Date, Time, Retention Time, Device, and Message. The table contains three rows of data:

Date	Time	Retention Time	Device	Message
11/12/2015	12:07:33 PM -08:00		Pump_E...	User Jay Lorch (lor...
11/12/2015	12:07:17 PM -08:00		Pump_E...	Connectio...
11/12/2015	12:07:17 PM -08:00		Pump_E...	...

A graph in the background shows a baseline with a peak at approximately 7.5 minutes. A callout box titled 'Inventory' is open, listing 'Pump\_ECD' and its sub-items: CRD Installation, EGC Installation, Column Installation, CR-TC Installation, and CRS Installation. A red box with the text '很容易在控制台访问' (Easy to access from the control console) points to the 'Pump\_ECD' item in the inventory list.

很容易在控制台  
访问



指定耗材的简单介绍

一步步引导安装耗材  
每一个主要步骤都分解为小步，任何主要步骤都可以展开和收起

安装所需的任何控制都会显示在页面底部

# 耗材安装指南

为每一个耗材都提供了视频指导

# RFID 耗材识别功能

# RFID 耗材识别功能- 新工具

The screenshot displays the eWorkflow software interface. At the top, a navigation bar includes 'Launch eWorkflow', 'Smart Startup/Shutdown', 'Release Control', 'Monitor Baseline', and 'Queue'. The main interface is divided into several sections:

- Consumables:** A dropdown menu is open, showing a list of items: 'Pump\_ECD', 'CRD Installation', 'EGC Installation', 'Column Installation', 'CR-TC Installation', and 'CRS Installation'. A callout box points to this menu with the text: '也很容易在控制台的相同下拉菜单中访问' (It is also easy to access in the same dropdown menu on the control console).
- EGC (Electrode Guard Control):** Shows 'ED \$1' and 'ED Total \$1' both at '1 μS'. It includes 'On/Off' buttons for 'Concentration' and 'CR-TC', and a 'Suppressor' status indicator.
- Pump:** Displays 'Flow 0.500 [ml/min]' and 'Pressure 0 [psi]'. It includes 'Upper Limit' (3000.00 [psi]) and 'Lower Limit' (200.00 [psi]) settings, along with 'Connect', 'Disconnect', and 'Prime' buttons.
- Valves:** Shows 'HP Valve A', 'LP Valve 1 Closed', and 'LP Valve 2 Closed'. A diagram of the valve assembly is also visible.
- Chromatogram:** A large plot area showing a baseline with a significant peak at approximately 7.5 minutes. The y-axis ranges from -1000 to 2611.
- Table:** A table at the bottom right provides details for the peak at 7.5 minutes:
 

Date	Time	Retention Time	Device	Message
11/12/2015	12:07:33 PM -08:00		User Jay Lorch (lor...	
11/12/2015	12:07:17 PM -08:00		Pump_E...	Connectio...
11/12/2015	12:07:17 PM -08:00		Pump_E...	...



# RFID 耗材识别功能- 新工具

The screenshot displays the 'Consumables Inventory' window with a table of installed consumables. A callout box highlights the 'Serial No.' column header, with a text box stating: '用户可以选择不追踪的耗材' (Users can choose consumables not to be tracked). Another callout box points to the 'Serial No.' values in the table, with a text box stating: '列出RFID-检测的和电缆连接的耗材以及它们的详细情况。' (List consumables with RFID detection and cable connection details).

Tracked	Part No.	Description	Size	Chemistry	Serial No.	Lot No.	Detected By
<input checked="" type="checkbox"/>	082541	Dionex AERS 500 (2 mm)	Microbore	Anion	140101000	01501002H	cable
<input checked="" type="checkbox"/>	085091	Dionex ACRS (2 mm)	Microbore	Anion	140101004	000000000	RFID
<input checked="" type="checkbox"/>	088662	Dionex CR-ATC 600	Analytical	Anion	140101000	000000000A	cable
<input checked="" type="checkbox"/>	088670	Unknown	Microbore	Cation	140101000	01501002	cable

**Details for Dionex ACRS (2 mm) (Serial No. 140101004):**

Drag a column header here to group by that column.

Name	Week	Index	Value
BackgroundConductivity	22		3.3
BackgroundConductivity	23		3.4
BackgroundConductivity	24		3.5
BackgroundConductivity	25		3.6
BackgroundConductivity	26		3.7
TotalInjections			9999

**Compatibility Check Results:**

- ✘ One or more devices does not have an approved consumables set.
- ⚠ Instrument is tracking consumables of unknown or incompatible size.
- ⚠ Instrument is tracking consumables of unknown or incompatible chemistry.

If the list is missing any installed consumables, check all connections, ensure that each RFID tag is correctly oriented, and click Rescan.  
At least one configured device requires that consumables be approved before injections can be run.

Buttons: Rescan, Approve, Close

# RFID 耗材识别功能- 新工具

The screenshot displays the eWorkflow software interface. The top navigation bar includes: Launch eWorkflow, Smart Startup/Shutdown, Release Control, Monitor Baseline, and a gear icon. The main menu has tabs for Home, Sampler, Pump\_ECD, EDet, CDet, Electrolytics, Audit, Startup, and Queue. The 'Pump\_ECD' tab is active, showing control panels for EGC, CR-TC, and Suppressor. The Pump control panel includes fields for Flow (0.500 ml/min), Pressure (0 psi), Upper Limit (3000.00 psi), and Lower Limit (200.00 psi). The Valves section shows Inj Valve, HP Valve (A), LP Valve 1, and LP Valve 2, all currently closed. A diagram of the valve assembly is also visible.

A callout menu is open over the 'Inventory' section, listing the following items:

- Pump\_ECD
- CRD Installation
- EGC Installation
- Column Installation
- CR-TC Installation
- CRS Installation

Below the callout menu is a data table with the following content:

Date	Time	Retention Time	Device	Message
11/12/2015	12:07:33 PM -08:00		User Jay Lorch (lor...	
11/12/2015	12:07:17 PM -08:00		Pump_E...	Connectio n establis...
11/12/2015	12:07:17 PM -08:00		Pump_E...	

也很容易在控制台的相同下拉菜单中访问

# RFID 耗材识别功能- 新工具

The screenshot displays the 'Consumables Inventory' window. At the top, there are navigation tabs: Home, Sampler, Pump\_ECD, EDet, CDet, Electrolytics, Audit, Startup, and Queue. Below these are buttons for 'Smart Startup/Shutdown', 'Release Control', 'Monitor Baseline', 'Consumables', and '<Last Used>'. The main area is titled 'Consumables Inventory' and contains a table of installed consumables. A callout box highlights the 'Part No.' and 'Description' columns. Below the table, a 'Details for Dionex ACRS (2 mm) (Serial No. 140101004):' window is open, showing a table with columns for Name, Week, Index, and Value. A callout box points to the 'Index' column header. At the bottom, there is a 'Compatibility Check Results:' section with warning icons and text.

**Installed Consumables:**

Tracked	Part No.	Description	Size	Chemistry	Serial No.	Lot No.	Detected By
<input checked="" type="checkbox"/>	082541	Dionex AERS 500 (2 mm)	Microbore	Anion	140101000	01501002H	cable
<input checked="" type="checkbox"/>	085091	Dionex ACRS (2 mm)	Microbore	Anion	140101004	000000000	RFID
<input checked="" type="checkbox"/>	088662	Dionex CR-ATC 600	Analytical	Anion	140101000	000000000A	cable
<input checked="" type="checkbox"/>	088670	Unknown	Microbore	Cation	140101000	01501002	cable

**Details for Dionex ACRS (2 mm) (Serial No. 140101004):**

Drag a column header here to group by that column.

Name	Week	Index	Value
BackgroundConductivity	22		3.3
BackgroundConductivity	23		3.4
BackgroundConductivity	24		3.5
BackgroundConductivity	25		3.6
BackgroundConductivity	26		3.7
TotalInjections			9999

**Compatibility Check Results:**

- ⊗ One or more devices does not have an approved consumables set.
- ⚠ Instrument is tracking consumables of unknown or incompatible size.
- ⚠ Instrument is tracking consumables of unknown or incompatible chemistry.

If the list is missing any installed consumables, check all connections, ensure that each RFID tag is correctly oriented, and click Rescan.  
At least one configured device requires that consumables be approved before injections can be run.

Buttons: Rescan, Approve, Close

用户可以选择不追踪的耗材

列出RFID-检测的和电缆连接的耗材以及它们的详细情况。

# 简化的耗材安装—新工具

Launch eWorkflow > Smart Startup/Shutdown > Release Control > Monitor Baseline > Consumables > <Last Used>

Home | Sampler | Pump\_ECD | EDet | CDet | Electrolytics | Audit | Startup | Queue

Consumables Inventory

Installed Consumables:

Tracked	Part No.	Description	Size	Chemistry	Serial No.	Lot No.	Detected By
<input checked="" type="checkbox"/>	082541	Dionex AERS 500 (2 mm)	Microbore	Anion	140101000	01501002H	cable
<input checked="" type="checkbox"/>	085091	Dionex ACRS (2 mm)	Microbore	Anion	140101004	000000000	RFID
<input checked="" type="checkbox"/>	088662	Dionex CR-ATC 600	Analytical	Anion	140101000	000000000A	cable
<input checked="" type="checkbox"/>	088670	Unknown	Microbore	Cation	140101000	01501002	cable

Details for Dionex ACRS (2 mm) (Serial No. 140101004):

Drag a column header here to group by that column.

Name	Week	Index	Value
BackgroundConductivity	22		3.3
BackgroundConductivity	23		3.4
BackgroundConductivity	24		3.5
BackgroundConductivity	25		3.6
BackgroundConductivity	26		3.7
TotalInjections			9999

Compatibility Check Results:

- One or more devices does not have an approved consumables set.
- Instrument is tracking consumables of unknown or incompatible size.
- Instrument is tracking consumables of unknown or incompatible chemistry.

If the list is missing any installed consumables, check all connections, ensure that each RFID tag is correctly oriented, and click Rescan.  
At least one configured device requires that consumables be approved before injections can be run.

Rescan | Approve | Close

列出与所选定的  
耗材相关的所有  
数据



# 简化的耗材安装—新工具

Consumables Inventory

Tracked	Part No.	Description	Size	Chemistry	Serial No.	Lot No.	Detected By
<input checked="" type="checkbox"/>	082541	Dionex AERS 500 (2 mm)	Microbore	Anion	140101000	01501002H	cable
<input checked="" type="checkbox"/>	085091	Dionex ACRS (2 mm)	Microbore	Anion	140101004	000000000	RFID
<input checked="" type="checkbox"/>	088662	Dionex CR-ATC 600	Analytical	Anion	140101000	000000000A	cable
<input checked="" type="checkbox"/>	088670	Unknown	Microbore	Cation	140101000	01501002	cable

Details for Dionex ACRS (2 mm) (Serial No. 140101004):

Drag a column header here to group by that column.

Name	Week	Index	Value
BackgroundConductivity	22		3.3
BackgroundConductivity	23		3.4
BackgroundConductivity	24		3.5
BackgroundConductivity	25		3.6
BackgroundConductivity	26		3.7
TotalInjections			9999

Compatibility Check Results:

- ⚠ One or more devices does not have an approved consumables set.
- ⚠ Instrument is tracking consumables of unknown or incompatible size.
- ⚠ Instrument is tracking consumables of unknown or incompatible chemistry.

If the list is missing any installed consumables, check all connections, ensure that each RFID tag is correctly oriented, and click Rescan.  
At least one configured device requires that consumables be approved before injections can be run.

Buttons: Rescan, Approve, Close

自动检测耗材的兼容性和指示任何可能的误配或者其他问题。

# 虚拟柱功能 Virtual Column

# 离子色谱的方法开发

## 理想情况

广泛的分析物,确定最好的条件:

色谱柱

淋洗液

分离条件

## 障碍

需要耗费:

**时间**-开机准备和仪器运行

**物力**-色谱柱、洗脱液,样品,仪器磨损

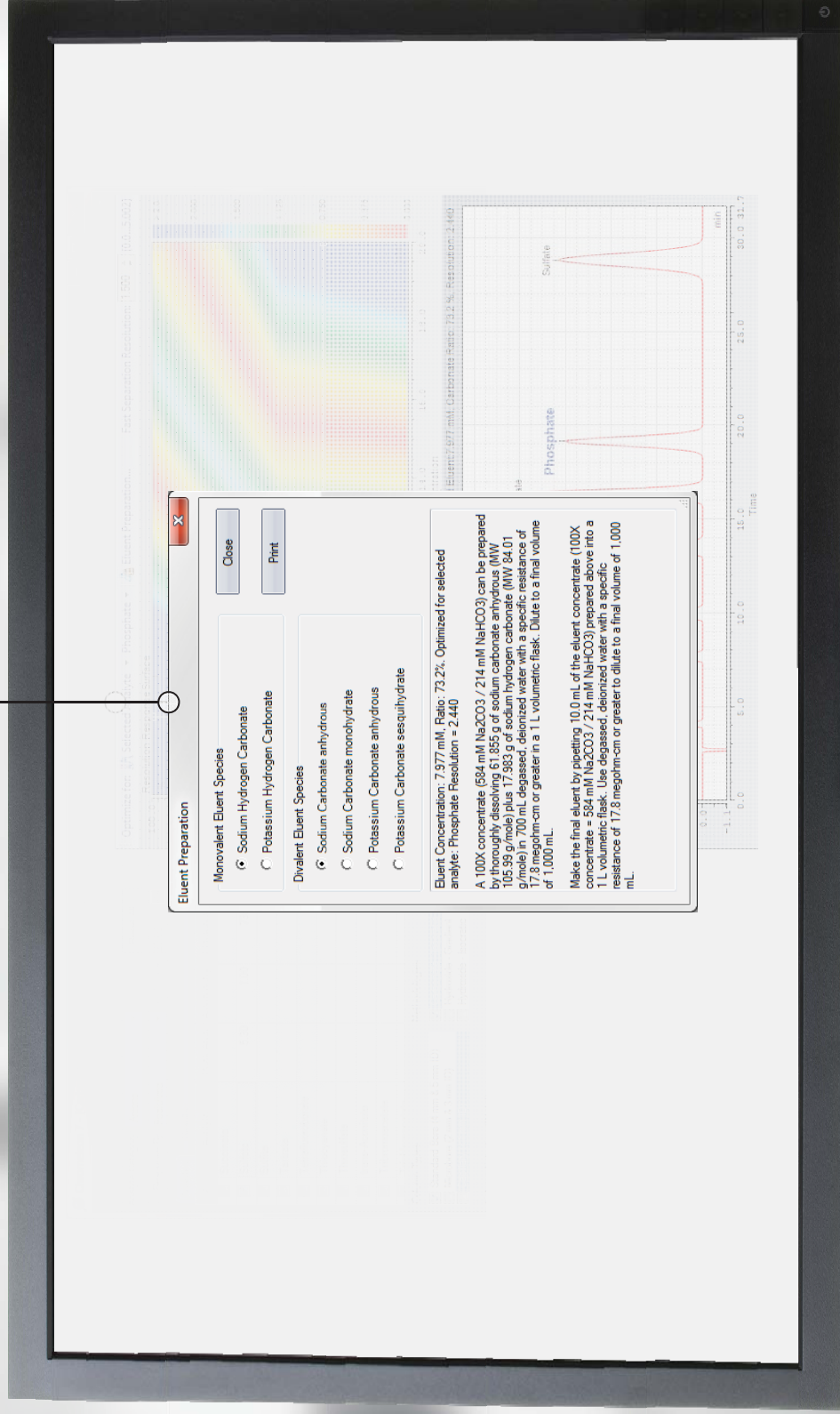
**分析时间**-占用仪器分析时间

难以找到真正的最优条件



# 虚拟柱进行色谱分离模拟

## 淋洗液配制指示



# 小结

## ➤ IC 故障诊断知识库

马上得到问题解决方案，尽量减少了花费在通过其他渠道得到解决方案上的时间

## ➤ 耗材安装指南

使初学者迅速学会安装，并给有丰富经验的离子色谱人员提供了参考

## ➤ RFID耗材识别功能- 新工具

快速提供侦测到的耗材的概况以及任何相关的数据

防止耗材的错误配置，识别任何潜在的问题

## ➤ 虚拟柱功能 Virtual Column

快速完成方法开发

# Integrion APP 面板控制



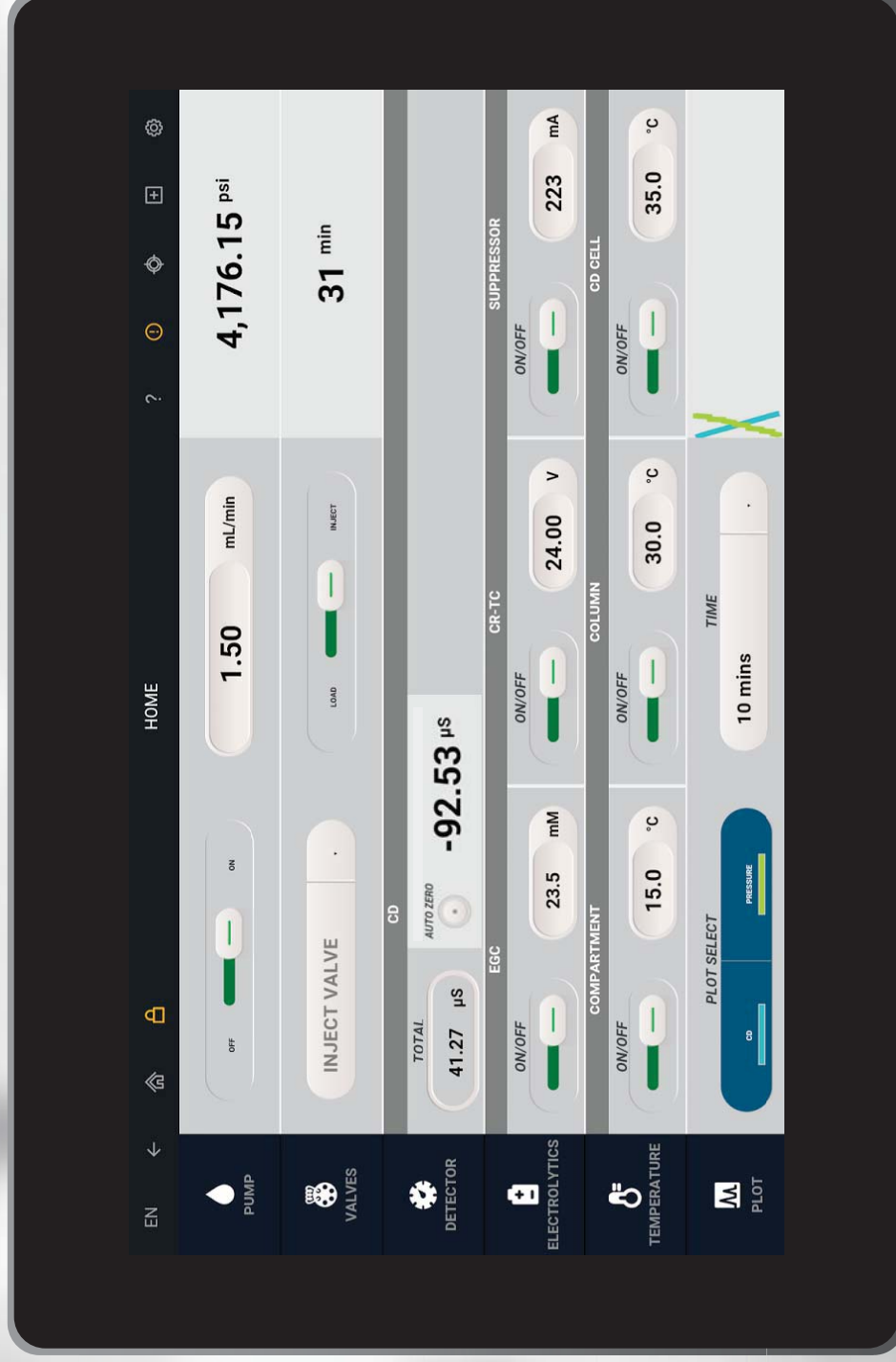
Available on the  
**App Store**



ANDROID APP ON  
**Google play**



# Integrion 前面板



# Integrion 前面板

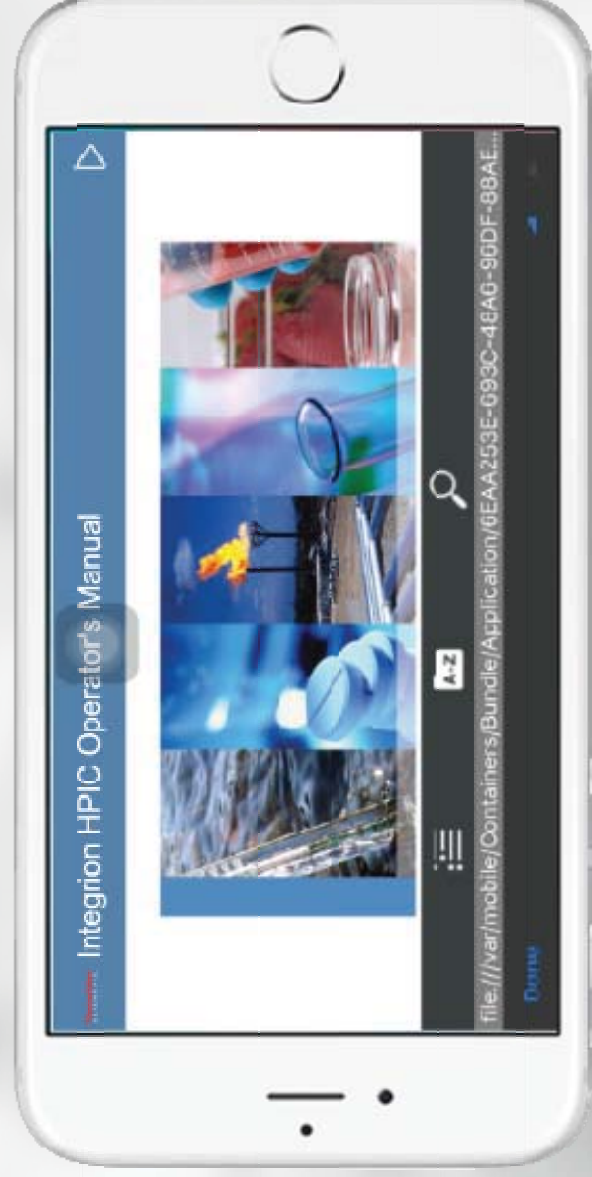
EN ← 🏠 🔒 ? ⓘ 📶 + ⚙️

CONSUMABLES

	Part Number	Name	Serial Number	Lot Number
<input type="checkbox"/> Separator	060549	Dionex IonPac AS18 (4mm)	151028019	01427187
<input checked="" type="checkbox"/> Trap	059660	Dionex ATC-3 (4 mm) Anion	151028024	01411115
<input checked="" type="checkbox"/> Guard	060551	Dionex IonPac AG18 (4mm)	151028020	01427187
<input checked="" type="checkbox"/> Concentrator	063079	Dionex IonPac UTAC-LP1	151028023	01427125B
<input checked="" type="checkbox"/> Suppressor CR-TC	123456	Dionex CERS 500 (4 mm)	15021010	00007748
	654321	Dionex CR-CTC 600	87654321	88899900



# Dionex Integration APP 也可安装于手机



# 精巧设计——真正懂你的离子色谱仪





- **离子色谱技术发展**
  1. 离子色谱技术发展趋势
  2. 高压离子色谱(HPIC)技术
- **真正懂您的分析技术——HPIC integration**
  1. 离子色谱新产品特色介绍
  2. 变色龙软件新性能介绍
- **离子色谱新产品典型新应用**
  1. HPIC在环境领域中的典型应用
  2. HPIC在食品领域中的典型应用
  3. HPIC在化工领域中的典型应用
  4. HPIC在医药分析中的典型应用

# Integrion 高压离子色谱的典型应用



- 环境水中的阴离子
- 饮用水中消毒副产物
- 环境水中的高氯酸盐 (AU148)
- 环境中硫酸离子和氰化物
- 饮用水中的阴离子 (AN154)
- 饮用水中的溴酸盐 (AN167)
- 废水中的阳离子 (AN141)



- 生物燃料中的硫和氯
- 碳酸氢钠中的氨 (AN1073)
- 乙醇中的阴离子 (AU194)
- 碳酸锂中的锂测定 (AN1090)



- 食品中亚硝酸盐和硝酸盐
- 小麦粉中溴酸盐
- 朗姆酒中的单糖和二糖
- 米酒中的碳水化合物 (新)
- 烈酒中的碳水化合物 (新)
- 功能饮料中的糖 (新)
- 保健品中的葡萄糖胺 (AN197)
- 红酒中的碳水化合物 (新)
- 威士忌中的碳水化合物 (新)

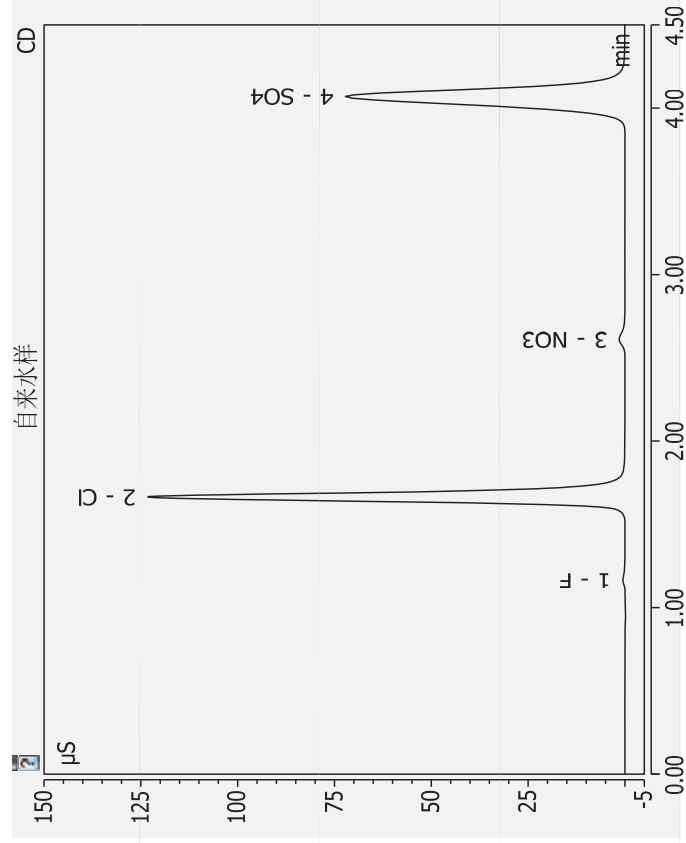


- 药物制剂中的柠檬酸 (AN164)
- 肝素糖杂质 (AN233)
- 托吡酯中的阴离子 (AN258)



## 环境水样中常见阴离子的快速分析

### 自来水样品



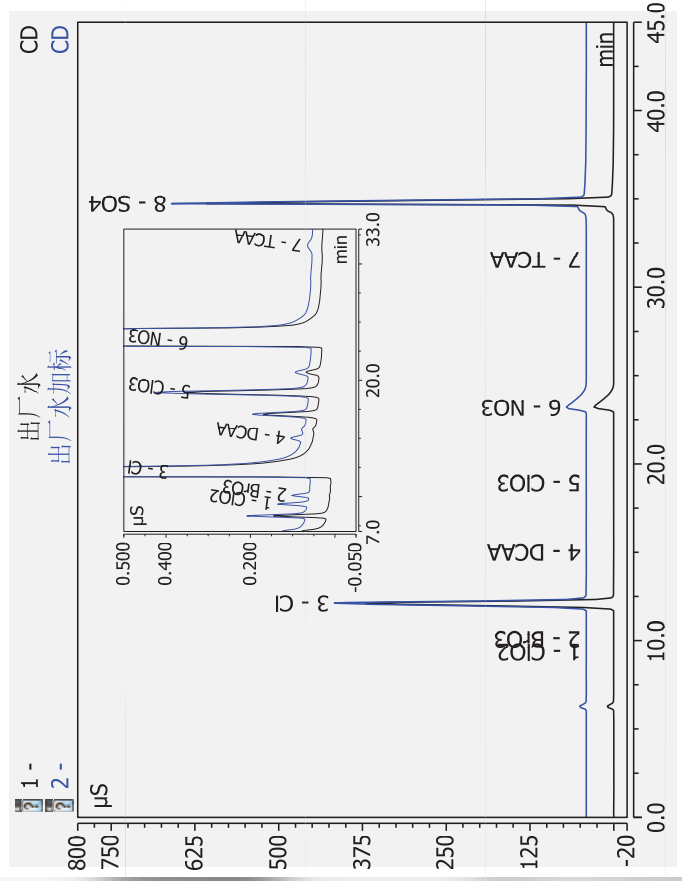
### 色谱条件

**色谱柱:** 戴安 IonPac AG22-Fast-4µm  
 戴安 IonPac AS22-Fast-4µm,  
 4 × 150 mm  
**淋洗液:** 4.5 mM 碳酸钠/1.4 mM 碳酸氢钠  
**流速:** 1.2 mL/min  
 2.0 mL/min  
**进样体积:** 10 µL  
**柱温:** 30 °C  
**检测:** 抑制电导,  
 戴安 AERS 500 碳酸盐抑制器, 4 mm  
 40 mA, 循环模式  
**样品处理:** 以0.22µm滤膜滤过, 直接进样



## 出厂水中痕量消毒副产物的分离测定

### 市政饮用水样品



### 色谱条件

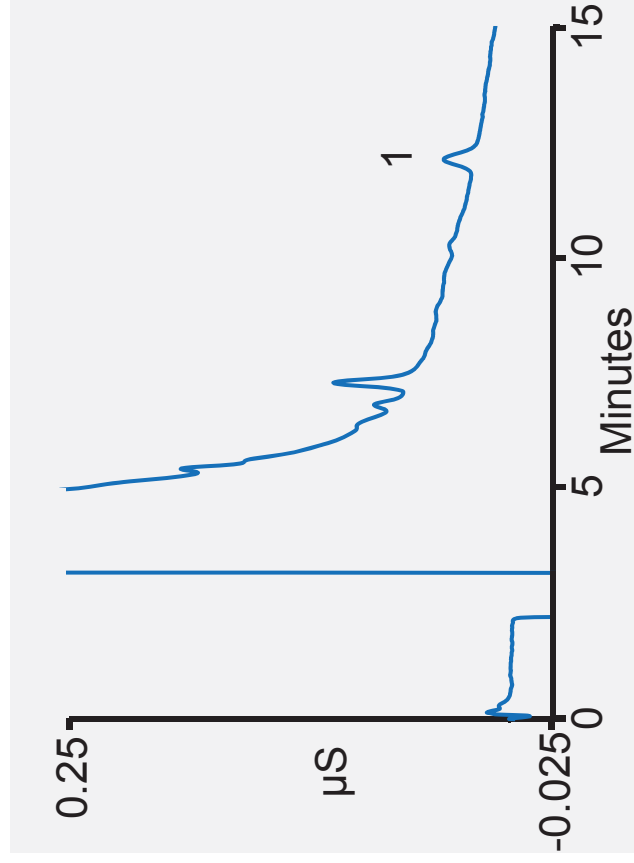
Columns:	Dionex IonPac AS19-4µm(4 × 250 mm), Dionex IonPac AG19-4µm(4 × 50mm)
Eluent:	KOH梯度: 0-30min, 8mmol/L KOH; 30.1-35min, 45mmol/L KOH; 35.1-45min, 8mmol/L KOH
Eluent Source:	integriion集成淋洗液自动发生装置
Column Temp:	28 °C
Flow Rate:	1.0 mL/min
Inj. Volume:	500 µL
Detection:	抑制电导., Dionex AERS 500, 4 mm,



AU148

# 环境水样中高氯酸盐的快速分析

环境水样



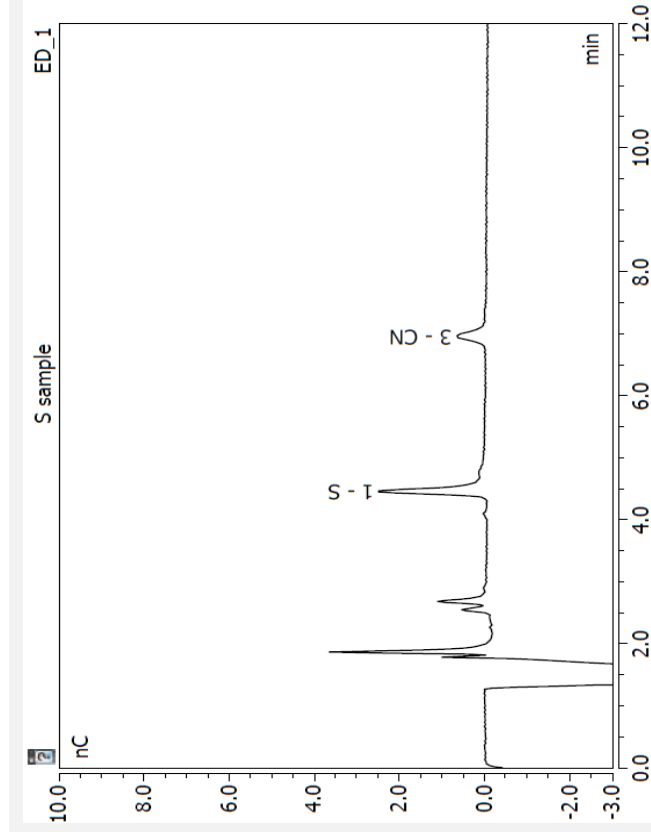
色谱条件

Columns:	Dionex IonPac AG16, Dionex IonPac AS16, 4 x 250 mm
Eluent:	50 mM KOH
Eluent Source:	Dionex EGC 500 KOH with CR-ATC 600
Column Temp:	30 °C
Flow Rate:	1.2 mL/min
Inj. Volume:	1000 μL
Detection:	Suppressed cond., Dionex AERS 500, 4 mm, external water mode
Peaks:	1. Perchlorate 4 μg/L



## 环境水样中硫化物和氰根的分析

### 环境水样



### 色谱条件

Columns: Dionex IonPac AG7  
Dionex IonPac AS7, 4 x 250 mm

Eluent: 100mM NaOH/250mM NaAc

Eluent Source: 手工配备

Column Temp: 30 °C

Flow Rate: 1.0 mL/min

Inj. Volume: 25 µL

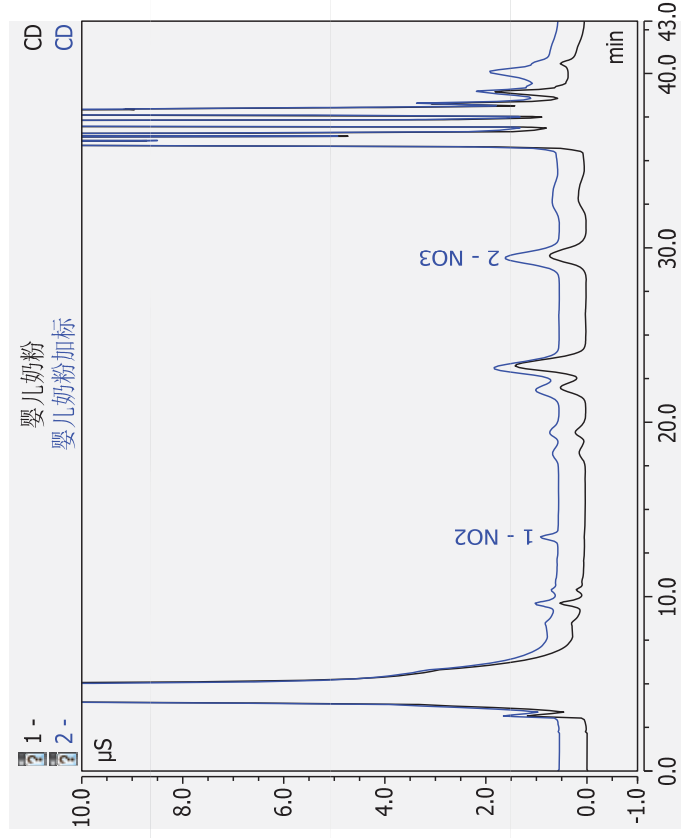
Detection: PAD, Ag/AgCl,,



## GB5009.33-2010

## 食品中亚硝酸盐和硝酸盐的测定

### 牛奶样品



### 色谱条件

Columns:	Dionex IonPac AS11-HC-4 $\mu\text{m}$ (4 $\times$ 250 mm), Dionex IonPac AG11-HC-4 $\mu\text{m}$ (4 $\times$ 50mm)
Eluent:	KOH梯度: 0-33min, 5mmol/L KOH; 33.2-38.2min, 50mmol/L KOH; 38.4-43min, 5mmol/L KOH;
Eluent Source:	integrion集成淋洗液自动发生装置
Column Temp:	30 $^{\circ}\text{C}$
Flow Rate:	1.3 mL/min
Inj. Volume:	50 $\mu\text{L}$
Detection:	抑制电导, Dionex AERS 500, 4 mm,

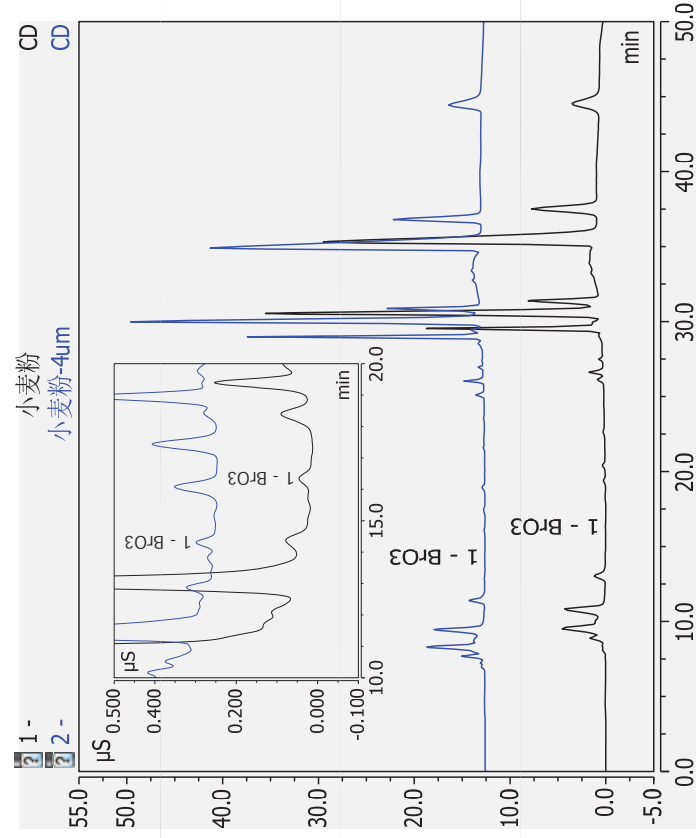




## GBT 20188-2006

## 小麦粉中溴酸盐的测定

### 小麦粉样品



### 色谱条件

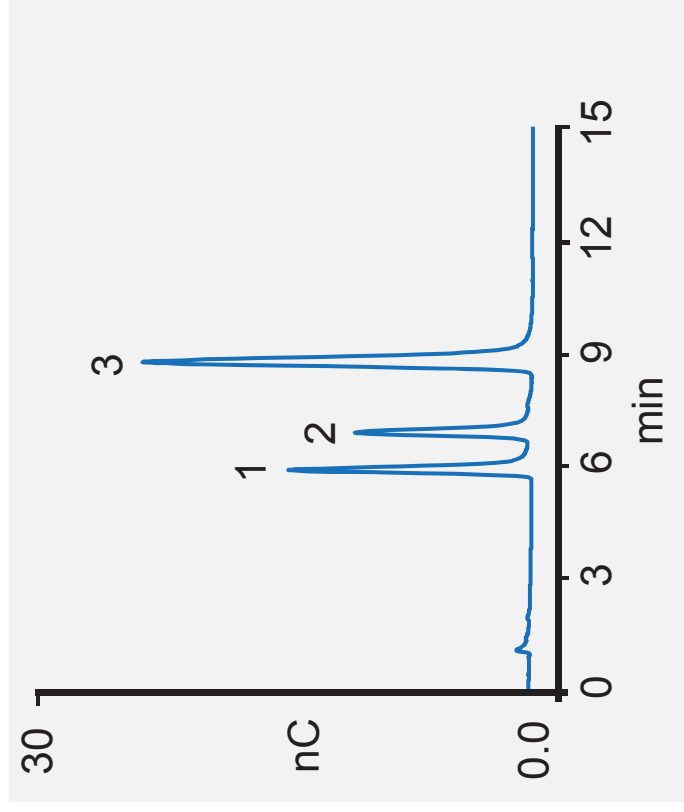
Columns:	Dionex IonPac AS19-4 $\mu$ m(4 $\times$ 250 mm), Dionex IonPac AG19-4 $\mu$ m(4 $\times$ 50mm)
Eluent:	KOH梯度: 0-15min, 5mmol/L KOH; 15-25min, 5-30mmol/L KOH; 25-30min, 30-40mmol/L KOH; 30-35min, 40mmol/L KOH;
Eluent Source:	integration集成淋洗液自动发生装置
Column Temp:	30 $^{\circ}$ C
Flow Rate:	1.0 mL/min
Inj. Volume:	50 $\mu$ L
Detection:	抑制电导., Dionex AERS 500, 4 mm,



## 单糖和二糖 调味朗姆白酒样品中的单糖和二糖

调味的朗姆白酒样品

条件



**色谱柱:** 戴安 CarboPac PA20 保护柱, 戴安 CarboPac PA20, 3 mm i.d.  
**淋洗液:** 35 mM KOH, 15 到 25 min 用 100 mM KOH 洗  
**淋洗液来源:** 戴安 EGC 500 KOH 发生罐, 戴安 CR-ATC 600 trap column, high pressure degasser  
**流速:** 0.50 mL/min  
**进样体积:** 0.4  $\mu$ L  
**柱温:** 30  $^{\circ}$ C  
**检测:** 脉冲安培检测, 金电极, 62 mil 垫片  
**波形:** 标准糖四电位波形  
**参比电极:** Ag/AgCl  
**样品处理:** 去离子水稀释 100 倍  
**峰:**  
1. 葡萄糖 0.30 g/L  
2. 果糖 0.28  
3. 蔗糖 1.08

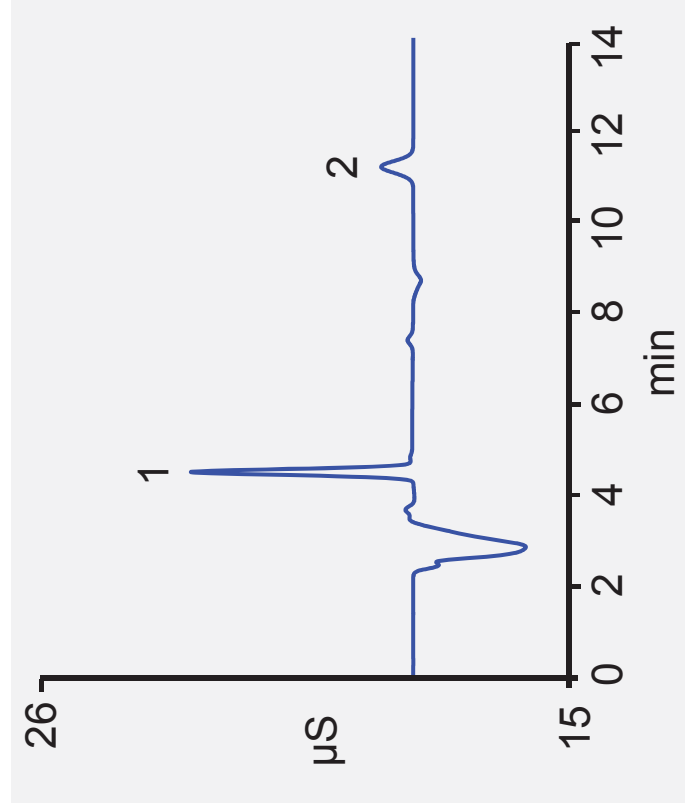


AU194

通过直接进样测定变性乙醇中存在和潜在的硫酸根和总的无机氯化物

变性乙醇样品

色谱条件



色谱柱:

戴安 IonPac AG22-Fast-4 $\mu$ m  
戴安 IonPac AS22-Fast-4 $\mu$ m,  
4  $\times$  150 mm

淋洗液:

4.5 mM 碳酸钠  
1.4 mM 碳酸氢钠

流速:

1.2 mL/min

进样体积:

25  $\mu$ L

柱温:

30  $^{\circ}$ C

检测:

抑制电导,  
戴安 AERS 500 碳酸盐抑制器, 4 mm  
40 mA, 循环模式

样品处理:

加 5 mg/L 氯离子 and 1 mg/L  
硫酸根

峰:

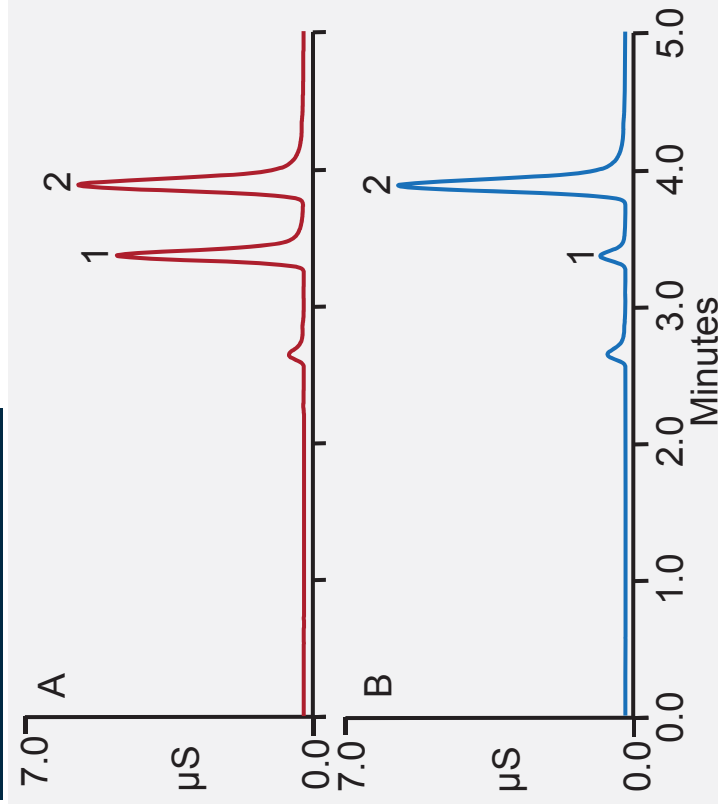
1. 氯离子 6.6 mg/L  
2. 硫酸根 1.8



## AN164 update with Dionex IonPac AS11HC-4 $\mu$ m column

## 药物制剂中磷酸盐和柠檬酸根的测定

样品分离谱图



色谱条件

Columns:	Dionex IonPac AG11-HC-4 $\mu$ m, Dionex IonPac AS11-HC-4 $\mu$ m, 2 $\times$ 250 mm									
Eluent:	60 mM KOH									
Eluent Source:	Dionex EGC-500 KOH with Dionex CR-ATC 600 trap									
Flow Rate:	0.35 mL/min									
Inj. Volume:	2.5 $\mu$ L									
Column Temp.:	35 $^{\circ}$ C									
Detection:	Suppressed cond., Dionex AERS 500, 2 mm, 52 mA, recycle mode									
Peaks:	<table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>1. Phosphate</td> <td>12</td> <td>1.6 mg/L</td> </tr> <tr> <td>2. Citrate</td> <td>20</td> <td>20</td> </tr> </tbody> </table>		A	B	1. Phosphate	12	1.6 mg/L	2. Citrate	20	20
	A	B								
1. Phosphate	12	1.6 mg/L								
2. Citrate	20	20								



# 强大的分析应用案例Appslab文库

搜索



Appslab

找到一键式工作流程



行业

药物

环境

食品和饮料

化工

运行



# AppsLab Is a Flexible Tool for Searching Applications

The screenshot displays the Thermo Scientific AppsLab interface. At the top, it includes a navigation bar with the Thermo Scientific logo, 'AppsLab Library', and user options like 'Welcome, Susanne Kramer | Logout' and 'Contact Us | Getting Started'. Below this is a 'Follow us' section with social media icons for Facebook, Twitter, LinkedIn, Google+, and RSS. The main content area is divided into three vertical panels: 'Search' (showing a search results page), 'Find One-Click Workflows' (showing a workflow card for 'Pharma', 'Environmental', 'Food & Beverage', and 'Chemical'), and 'Run' (showing a scientist in a lab coat). A 'Share' bar with social media icons is at the bottom left. A central text box reads: 'Welcome to the Thermo Scientific AppsLab Library of Analytical Applications! The AppsLab Library of Analytical Applications is a fully searchable online, analytical method repository where you can find applications with detailed method information, chromatograms and related compound information. All the information needed to run, process and report the analysis is available in ready-to-use eWorkflows. Discover the latest applications from Thermo Fisher Scientific for LC, IC, GC, GC-MS and LC-MS instruments. Search by compound, column, instrument or any other method parameter and view key method parameters. Download one-click eWorkflows, created and tested by Thermo Fisher Scientific application scientists, which can be directly executed in your chromatography data system.' To the right, a search bar labeled 'Find a Method' and 'Find Methods For Your Needs' is shown. Below it, three application cards are displayed: 'AU178: A Faster Solution with Increased Resolution for Determining Chromatographic Identity and Absence of OSCS in Heparin Sodium', 'AU176: Preparation of Peptide N-Glycosidase F Digests for HPAE-PAD Analysis', and 'AN71: Determination of Polyphosphates Using Ion Chromatography with Suppressed Conductivity Detection'. Each card includes a small chromatogram image and the instrument type 'IC'.

Google-type Search

Additionally, search by instrument type or market

Instant access to most recently added applications

Google is a registered trademark of Google Inc.

**ThermoFisher**  
SCIENTIFIC

# AppsLab Can Perform Cross-technique Application Search



AppsLab Library

Welcome, Susanne Kramer | Logout  
Contact Us | Getting Started

Share



Follow us



**Search**



**Find One-Click Workflows**



**Run**



**Welcome to the Thermo Scientific AppsLab Library of Analytical Applications!**

The AppsLab Library of Analytical Applications is a fully searchable online, analytical method repository where you can find applications with detailed method information, chromatograms and related compound information. All the information needed to run, process and report the analysis is available in ready-to-use eWorkflows.

Discover the latest applications from Thermo Fisher Scientific for LC, IC, GC, GC-MS and LC-MS instruments. Search by compound, column, instrument or any other method parameter and view key method parameters. Download one-click eWorkflows, created and tested by Thermo Fisher Scientific application scientists, which can be directly executed in your chromatography data system.

**Find a Method**

**Find Methods For Your Needs**

**AU178: A Faster Solution with Increased Resolution for Determining Chromatographic Identity and Absence of OSCs in Heparin Sodium**

Instrument Type: IC



**AU176: Preparation of Peptide N-Glycosidase F Digests for HPAE-PAD Analysis**

Instrument Type: IC



**AN71: Determination of Polyphosphates Using Ion Chromatography with Suppressed Conductivity Detection**

Instrument Type: IC



Enter Key Words:  
**Amino acid**



# There May Be Multiple Chrom. Techniques for an Application

Results for multiple chromatography techniques

Share

Displaying 1-5 of 33 results for "amino acid" within Applications

amino acid

Q

Sort by

Title

▼

Items per page:

5


▼

Page 1 of 7
◀ ▶

**2D Analysis of Protein Therapeutics and Amino Acid Excipients**

Instrument Type: HPLC-CAD

Therapeutic proteins (antibodies and vaccines) vary considerably due to the nature and dose of the protein molecule. Aggregation is a major degradation pathway of protein therapeutics during storage. Stabilization of these protein formulations can be enhanced through the addition of specific excipients such as surfactants, amino acids and sugars. The separation of therapeutic protein and amino acid excipients was performed using a 2D approach. An integrated UHPLC system with a UV and universal charged aerosol detection offering multi-mode detection for the simultaneous analysis of both non-chr



**AN 142: Determination of Tryptophan Using AAA-Direct**

Instrument Type: HPLC

In this Application Note, the use of AAA-Direct for Trp determinations is investigated in proteins, peptides, and cell cultures. AAA-Direct technology provides both complete separations of all common amino acids using AminoPac PA10 and the direct detection of amino acids by integrated pulsed amperometric detection (IPAD). We present a new isocratic method designed to rapidly elute Trp while separating it from free amino acids, carbohydrates, and peptide fragments. This method reduces the run time to as short as 12 min, significantly increasing throughput compared to conventional techniques.



**AN 150: Determination of Amino Acids in Cell Cultures and Fermentation Broths.**

Instrument Type: HPLC (Bio-compatible)

This application note describes the use of AAA-Direct to analyze common amino acids in the presence of simple sugars, sugar alcohols, alcohols, and glycols in yeast and bacterial fermentation broths. In this application note, the AminoPac PA10 anion-exchange column is used to separate amino acid and carbohydrate ingredients in cell culture and fermentation broth media. High carbohydrate concentrations can hamper the determination of some amino acids due to co-elution. Also in this application note, disposable gold (Au) electrodes are evaluated for use in amino acid determination.



**An improved separation of derivatized amino acids using a Thermo Scientific TRACE TR-5 GC column**

Instrument Type: GC

This method shows the advantages of using the Thermo Scientific TRACE GC Ultra with the Thermo Scientific TRACE TR-5 0.25 µm column for the separation of derivatized amino acids with FID detection.



**AN1050: Evaluating Protein Glycosylation in Limited-Quantity Samples by HPAE-PAD, Monosaccharide Method**

Instrument Type: IC

HPAE-PAD methods provide a cost-effective option for investigating glycans without the derivatization required by many other methods. Electrochemical detection determines the glycans directly without the potential loss of sialylation or linkage rearrangement that may occur during analysis with other methods. HPAE-PAD can be used for determining monosaccharides, oligosaccharides, sialic acids, and other carbohydrates. This record shows a monosaccharide method.



**Refine by Feature:**

Instrument Type:

GC

HPLC

HPLC (Bio-compatible)

HPLC-CAD

IC

More...

Market:

BioPharma

Environmental

Food and Beverage

Metabolomics

Other

More...

Has eWorkflow:

Yes

No

Matrix:

Beer

brain extract/cellar fluid

brain tissue PCA extract

Cell culture and fermentation broth media

food

More...

Run Time:

From

to

Apply

Compound Name:

Ac-aminophen

Alanine

Amriptyline

ammonia

amphetamine

More...

Compound Class:

ACE inhibitor

# There Are Various Filtering Tools Within AppsLab Library

Search returns large number of results:

Instrument Type

Market

eWorkflow

Matrix

Run Time

Compound Name and Class

Column

Date Added

Share

Displaying 1-5 of 33 results for "amino acid" within Applications

Sort by Title ▼ Ascending ▼

Items per page: 5 ▼ Page 1 of 7 ▶

**Refine by Feature:**

**Instrument Type:**

GC

HPLC

HPLC (Bio-compatible)

HPLC-CAD

IC

More...

**Market:**

BioPharma

Environmental

Food and Beverage

Metabolomics

Other

More...

**Has eWorkflow:**

Yes

No

**Matrix:**

Beer

brain extract/cellar fluid

brain tissue PCA extract

Cell culture and fermentation broth media

food

More...

**Run Time:**

From  to

**Compound Name:**

Ac-stamphen

Alanine

Amriptyline

ammonia

amphetamine

More...

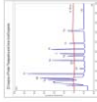
**Compound Class:**

ACE inhibitor

**2D Analysis of Protein Therapeutics and Amino Acid Excipients**

Instrument Type: HPLC-CAD

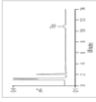
Therapeutic proteins (antibodies and vaccines) vary considerably due to the nature and dose of the protein molecule. Aggregation is a major degradation pathway of protein therapeutics during storage. Stabilization of these protein formulations can be enhanced through the addition of specific excipients such as surfactants, amino acids and sugars. The separation of therapeutic protein and amino acid excipients was performed using a 2D approach. An integrated UHPLC system with a UV and universal charged aerosol detection offering multi-mode detection for the simultaneous analysis of both non-chr



**AN 142: Determination of Tryptophan Using AAA-Direct**

Instrument Type: HPLC

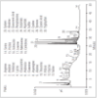
In this Application Note, the use of AAA-Direct for Trp determinations is investigated in proteins, peptides, and cell cultures. AAA-Direct technology provides both complete separations of all common amino acids using AminoPac PA10 and the direct detection of amino acids by integrated pulsed amperometric detection (IPAD). We present a new isocratic method designed to rapidly elute Trp while separating it from free amino acids, carbohydrates, and peptide fragments. This method reduces the run time to as short as 12 min, significantly increasing throughput compared to conventional techniques.



**AN 150: Determination of Amino Acids in Cell Cultures and Fermentation Broths.**

Instrument Type: HPLC (Bio-compatible)


This application note describes the use of AAA-Direct to analyze common amino acids in the presence of simple sugars, sugar alcohols, alcohols, and glycols in yeast and bacterial fermentation broths. In this application note, the AminoPac PA10 anion-exchange column is used to separate amino acid and carbohydrate ingredients in cell culture and fermentation broth media. High carbohydrate concentrations can hamper the determination of some amino acids due to co-elution. Also in this application note, disposable gold (Au) electrodes are evaluated for use in amino acid determination.



**An improved separation of derivatized amino acids using a Thermo Scientific TRACE TR-5 GC column**

Instrument Type: GC

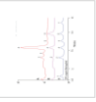
This method shows the advantages of using the Thermo Scientific TRACE GC Ultra with the Thermo Scientific TRACE TR-5 0.25 µm column for the separation of derivatized amino acids with FID detection.



**AN1050: Evaluating Protein Glycosylation in Limited-Quantity Samples by HPAE-PAD, Monosaccharide Method**

Instrument Type: IC

HPAE-PAD methods provide a cost-effective option for investigating glycans without the derivatization required by many other methods. Electrochemical detection determines the glycans directly without the potential loss of sialylation or linkage rearrangement that may occur during analysis with other methods. HPAE-PAD can be used for determining monosaccharides, oligosaccharides, sialic acids, and other carbohydrates. This record shows a monosaccharide method.

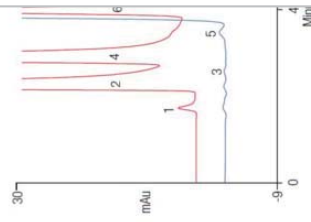


63

**ThermoFisher**  
SCIENTIFIC

# Compare Method Details

## AU185: Determination of Nitrite and Nitrate in Wastewater Using Capillary IC with UV Detection



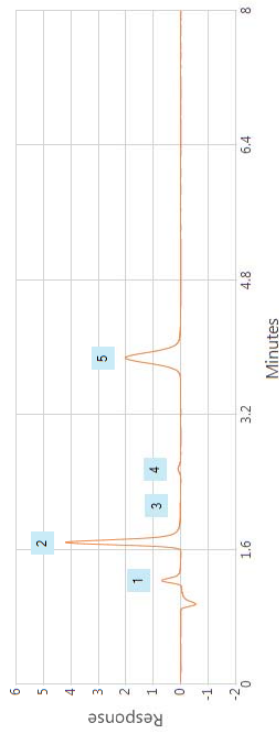
Overview Method System Downloads Comments

Ion chromatography (IC) with suppressed conductivity detection is an effective technique for determining nitrate and nitrite at low concentrations in high ionic strength matrices. However, determining nitrate and nitrite at low concentrations in high ionic strength matrices with UV detection provides an alternate approach for determining nitrate and nitrite. This method updates ion chromatography in drinking water using carbonate eluents. All seven inorganic anions are determined within 5 min.

Component Number	Component Name	Compound Class	Retention Time (min)
1	Fluoride	Inorganic Anion	2.00
2	Chloride	Inorganic Anion	2.50
3	Nitrite	Inorganic Anion	2.80
4	Sulfate	Inorganic Anion	3.00
5	Bromide	Inorganic Anion	3.80
6	Nitrate	Inorganic Anion	4.00

Market: Environmental  
 Keywords: ICS-5000+, IonPac AS18, UV detection, Wastewater, capillary IC, HPLC, nitrite, nitrate  
 Matrix: municipal wastewater

## Fast Determination of Inorganic Anions in City A Drinking Water Using Carbonate Eluents



ECD\_1



Overview Method System Downloads Comments

AS22 Fast\_City A Drinking Water. This method updates ion chromatography in drinking water using carbonate eluents. All seven inorganic anions are determined within 5 min.

Component Number	Component Name	Compound Class	Retention Time (min)
1	Fluoride	Inorganic Anion	1.23
2	Chloride	Inorganic Anion	1.68
3	Nitrite	Inorganic Anion	2.12
4	Nitrate	Inorganic Anion	2.55
5	Sulfate	Inorganic Anion	3.87

Market: Environmental  
 Keywords:  
 Matrix: Drinking water

# Chromatogram Zooming

### Fast Determination of Inorganic Anions in City A Drinking Water Using Carbonate Eluents

Request an Application   Ask the Expert   Add to Favorites   Print PDF

Zoom to view more details

### Fast Determination of Inorganic Anions in City A Drinking Water Using Carbonate Eluents

Request an Application   Ask the Expert   Add to Favorites   Print PDF

Request an Application   Ask the Expert   Add to Favorites   Print PDF

Overview   Method   System   Downloads   Comments

AS22 Fast\_City A Drinking Water This method updates determined within 5 min.

Component Number	Component Name	Compound Class
1	Fluoride	Inorganic Anion
2	Chloride	Inorganic Anion
3	Nitrite	Inorganic Anion
4	Nitrate	Inorganic Anion
5	Sulfate	Inorganic Anion

Market: Environmental  
Keywords:  
Matrix: Drinking water

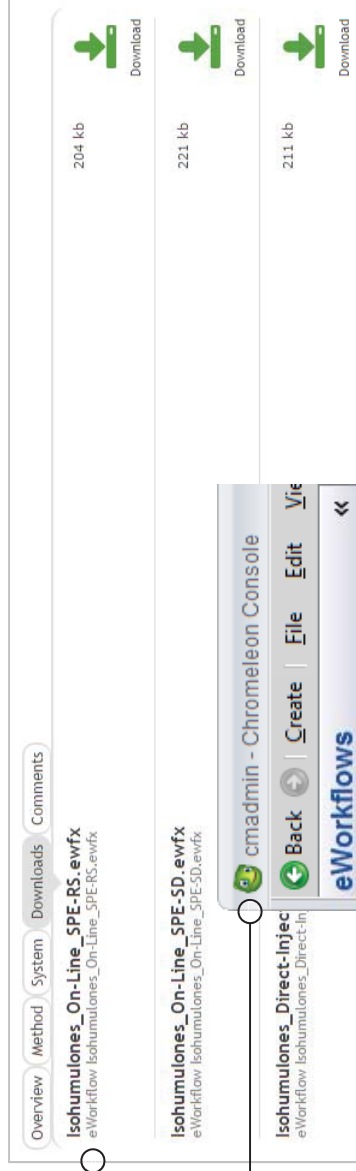
ECD\_1

ECD\_1

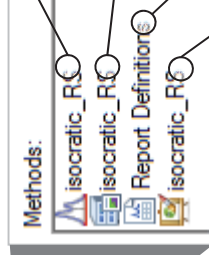
Unzoom

# One-click Workflow Concept

Direct download  
of an eWorkflow



Processing Method  
Instrument Method  
Report Template  
View Settings



# Ask a Question on an Application

## Fast Determination of Inorganic Anions in City A Drinking Water Using Carbonate Eluents

The screenshot displays a software interface for a chromatography application. At the top, there are navigation icons: 'Request an Application', 'Ask the Expert', 'Add to Favorites', and 'Print PDF'. Below these is a title bar and a main content area. On the left, a chromatogram shows 'Response' on the y-axis (ranging from -2 to 6) and 'Retention Time (min)' on the x-axis (ranging from 0 to 1.6). Two peaks are labeled '1' and '2'. A dialog box titled 'Ask the Expert' is open in the center, containing the following text:

**Application Name**  
Fast Determination of Inorganic Anions in City A Drinking Water Using Carbonate Eluents

**Question**  
I would like to know more about the system used.

Buttons for 'CANCEL' and 'SEND QUESTION' are visible at the bottom of the dialog. Below the dialog, there are tabs for 'Overview', 'Method', 'System', 'Downloads', and 'Comments'. The 'Overview' tab is active, showing a description: 'AS22 Fast\_City A Drinking Water This method updates inorganic anion determinations in drinking water using carbonate eluents. All seven inorganic anions are determined within 5 min.'

Component Number	Component Name	Compound Class	Retention Time (min)
1	Fluoride	Inorganic Anion	1.23
2	Chloride	Inorganic Anion	1.68
3	Nitrite	Inorganic Anion	2.12
4	Nitrate	Inorganic Anion	2.55
5	Sulfate	Inorganic Anion	3.87

Market: Environmental  
Keywords:  
Matrix: Drinking water

Annotations in the image:

- Ask the Expert Button**: Points to the 'Ask the Expert' icon in the top navigation bar.
- Ask the Expert Window**: Points to the 'Ask the Expert' dialog box.



# Request an Application

**Fast Determination of Inorganic Anions in City A Drinking Water Using Carbonate Eluents**

Request an Application    Add the Expert Favorites    Print PDF

**Name** Susanne Kramer

**Company** Thermo Scientific

**Location** GERMANY

**Industry** Other

**Email address** sk\_read@test.com

**Components of interest** nitrate, nitrite

**Matrix** mineral water

**Instrument type (preferred)** IC

**Other method requirements (e.g., LOD/LOQ)** 1 mg/L

**Comment**

**CANCEL**    **SEND EMAIL**

nts. All seven inorganic anions are

Request an Application Button

Request an Application Window

# Rate/Comment an Application

**Determination of Oxylhalides and Bromide in Drinking Water According to EPA Method 300.1**  
★★★★★ (1)

Rate/  
Comment  
Window

Rate/  
Comment  
Button


# Share an Application on Social Media

The screenshot displays the ThermoFisher Scientific 'AppsLab Library' interface. The main content area features a chromatogram titled 'Fast Determination of Inorganic Anions in City A Drinking Water Using Carbonate Eluents'. The y-axis is labeled 'Response' and ranges from -2 to 6. The x-axis is labeled 'Retention Time' and ranges from 0 to 6. Two peaks are visible, labeled '2' and '5'. Below the chromatogram is a table with columns for 'Retention Time', 'Peak Name', and 'Peak Area'. The table contains two rows of data corresponding to peaks 2 and 5. A 'Share' button is located to the left of the table. A 'Social Media Window' is open, showing a LinkedIn sharing dialog. The dialog title is 'Fast Determination of Inorganic Anions in City A Drinking Water Using Carbonate Eluents ...'. The dialog includes a text input field for a message, a 'Mitteln' button, and a 'Mitteln' button. A 'Sample Social Media Window' label points to the dialog. A 'Social Media Buttons' label points to the 'Share' button. The top navigation bar includes the ThermoFisher Scientific logo, 'AppsLab Library', and user information: 'Welcome, Susanne Kramer | Logout' and 'Contact Us | Getting Started'. The bottom right corner of the application shows copyright information: 'Dieses Fenster schließen Copyright © 2015, LinkedIn Corporation. Matrix: Drinking water. Uploaded on: 10/26/2010.'

Social Media Buttons

Sample Social Media Window

# Create a Favorite for a Search or Application



Add to Favorites  
Request an Application

Welcome, Susanne Kramer | Logout  
Contact Us | Getting Started

---

Displaying 1-2 of 2 results

**Refine by Feature:**

**Instrument Type:**

- HPLC-CAD
- IC

**Market:**

- BioPharma
- Chemical
- Clinical Research
- Environmental
- Food and Beverage
- More...

**Has eWorkflow:**

- Yes
- No

**Matrix:**

- Acetone
- aerated water
- Beer
- Beverage
- borated power plant water
- More...

**Add to Favorites**

**Favorite**  
Keywords: nitrate | Run Time: from 0 to 5 | Compound Name: Nitrite

**Comment**  
Separation of nitrite and nitrate with RT < 5 min

**B Drinking Water Using**  
- determinations in drinking water within 5 min.

**A Drinking Water Using**  
on determinations in drinking water within 5 min.

**Thermo SCIENTIFIC**

**AppsLab Library**

---

My Account  
Favorites

Go to Public Website

**Favorite Searches**

Search	Comment	Actions
Keywords: nitrate   Run Time: from 0 to 5   Compound Name: Nitrite	Separation of nitrite and nitrate with RT < 5 min	<input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Keywords: pah, hplc	PAH using HPLC	<input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Keywords: barbiturate	Barbiturate	<input type="button" value="EDIT"/> <input type="button" value="DELETE"/>

---

**Favorite Applications**

Application	Comment	Actions
Rapid screening method for polycyclic aromatic hydrocarbons (PAHs) using an advanced solid core UHPLC column and system combination	Interesting PAH paper	<input type="button" value="EDIT"/> <input type="button" value="DELETE"/>