

糖类物质的分离和纯化

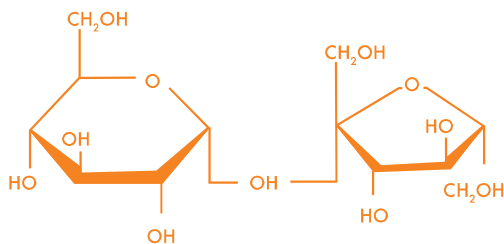
为具有挑战性应用而准备的解决方案



GRACE
材料技术
探索科技

糖类物质分离纯化的难点与挑战

糖类物质分离检测之挑战



糖呈现的一个特殊检测挑战是因其缺少发色团。传统糖检测方法是示差 (RI) 或低波长紫外 (190-205nm)。

因为示差灵敏度低且不能与梯度兼容因此不是用HPLC分离糖的理想选择。

低波长紫外检测也是灵敏度低且对流动相的光学性能有严格要求。基线漂移厉害且平衡时间长因为检测器对溶剂中光谱改变有响应。

许多在制药和食品配料/饮食补充行业中被合成的化合物正基于糖苷结构，而这些化合物也有相同的挑战，在分析或纯化时缺少发色团。

蒸发光散射检测技术在糖类物质分析纯化中之优势所在

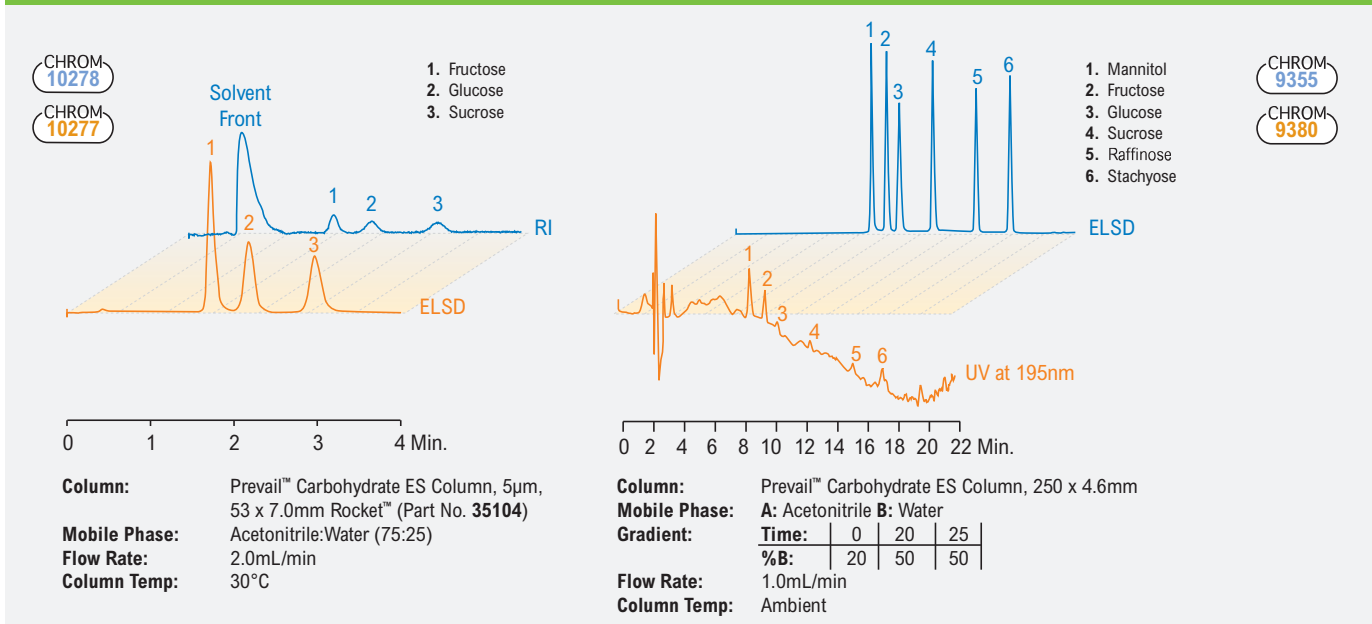
- * 比RI和低波长紫外更灵敏
- * 与梯度兼容
- * 基线稳定，甚至运行梯度
- * 溶剂选择不受紫外截止波长限制

ELSD是通用型的HPLC检测器能检测任何挥发性小于流动相的化合物，检测限低至纳克级别，在分析糖方面，ELSD比RI和低波长紫外有很多优势。

与低波长紫外相比，ELSD基线平稳，灵敏度更高。在检测前流动相已蒸发使得ELSD与梯度兼容，这样能够改善分离度并加快分离。而且，ELSD比RI检测器灵敏度高10-1000倍。

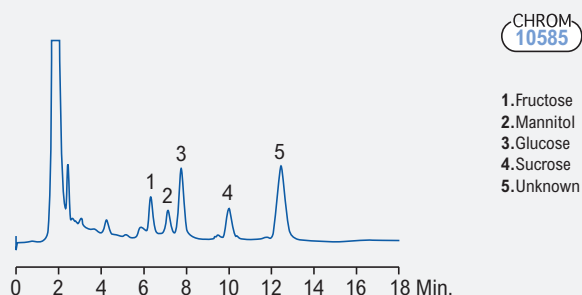
当纯化反应混合物时Reveleris X2 flash色谱系统中仍旧能看到ELSD的这些优势，由于ELSD是集成到flash系统中，并经过特殊优化。这个系统软件能切换样品分流，物理改变到达ELSD的洗脱量，对高浓度组分或低浓度组分进行优化。

同传统示差折光检测器和低波长紫外检测相比，蒸发光散射检测器可大大改善基线稳定性并提供更高灵敏度



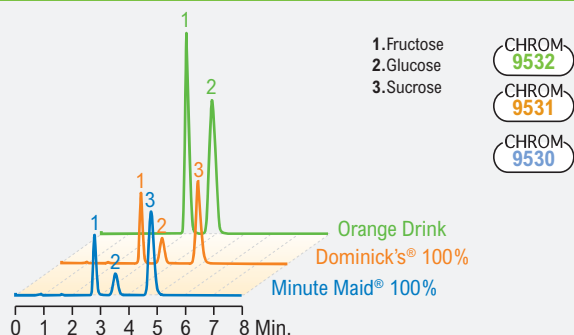
糖类物质分离纯化应用实例

Conquistador® Tequila



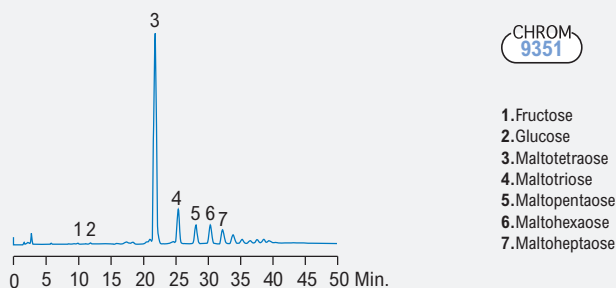
Column: Prevail™ Carbohydrate ES Column, 5µm, 250 x 4.6mm (Part No. 35101)
Mobile Phase: Acetonitrile : Water (75:25)
Flow Rate: 1.0mL/min
Detector: ELSD
Column Temp: Ambient

Orange Juice Profiles



Column: Prevail™ Carbohydrate ES Column, 5µm, 53 x 7.0mm Rocket™ (Part No. 35104)
Mobile Phase: Acetonitrile:Water (75:25)
Flow Rate: 1.3mL/min
Detector: ELSD
Column Temp: Ambient

Beer

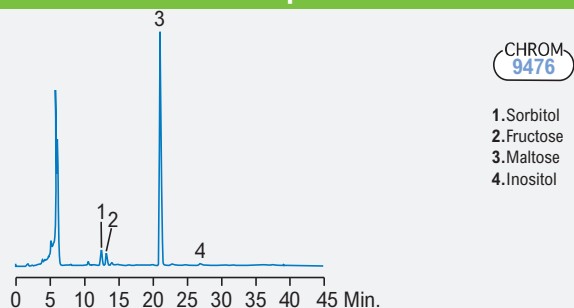


Column: Prevail™ Carbohydrate ES Column, 5µm, 250 x 4.6mm, (Part No. 35101)
Mobile Phase: A: Acetonitrile B: Water
Gradient:

Time:	0	50
%B:	20	35

Flow Rate: 1.0mL/min
Detector: ELSD
Column Temp: Ambient

Wine - Concord Grape

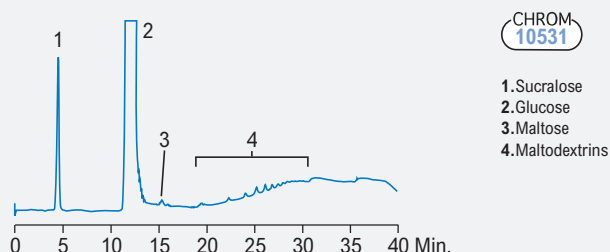


Column: Prevail™ Carbohydrate ES Column, 5µm, 250 x 4.6mm (Part No. 35101)
Mobile Phase: A: Acetonitrile B: Water
Gradient:

Time:	0	60
%B:	17	35

Flow Rate: 1.0mL/min
Detector: ELSD
Column Temp: Ambient

Splenda® Sweetener

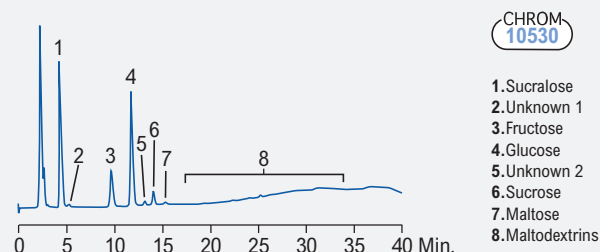


Column: Prevail™ Carbohydrate ES Column, 5µm, 250 x 4.6mm, (Part No. 35101)
Mobile Phase: A: Acetonitrile B: Water
Gradient:

Time:	0	5	10	15	25
%B:	20	20	30	30	50

Flow Rate: 1.0mL/min
Detector: ELSD
Column Temp: Ambient

Pepsi One® Cola



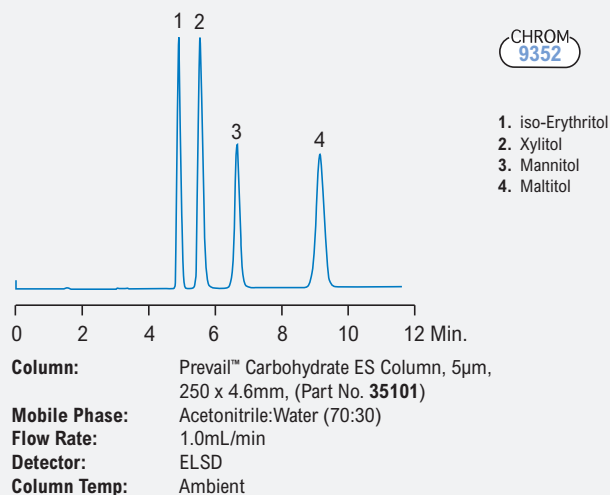
Column: Prevail™ Carbohydrate ES Column, 5µm, 250 x 4.6mm, (Part No. 35101)
Mobile Phase: A: Acetonitrile B: Water
Gradient:

Time:	0	5	10	15	25
%B:	20	20	30	30	50

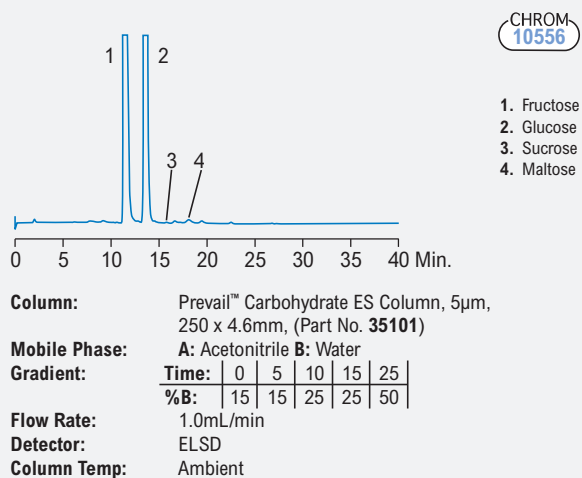
Flow Rate: 1.0mL/min
Detector: ELSD
Column Temp: Ambient

糖类物质分离纯化应用实例

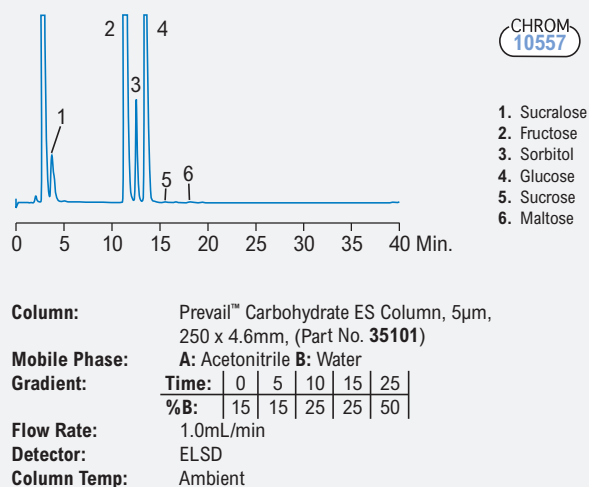
Sugar Alcohols



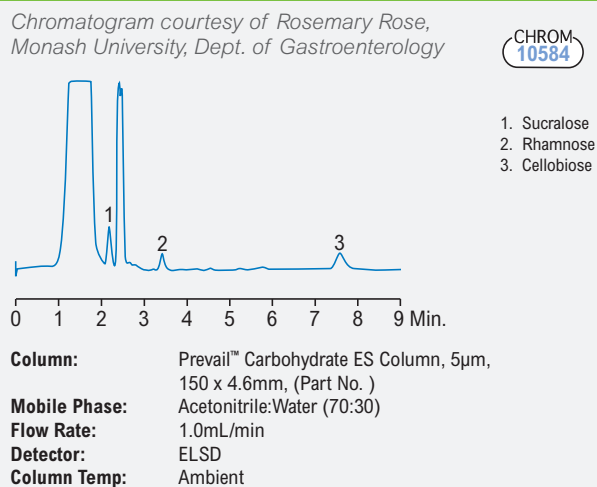
Cough Syrup



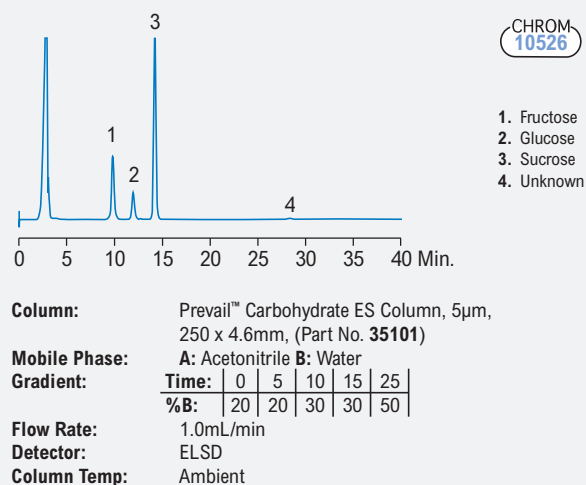
Robitussin® Flu Syrup



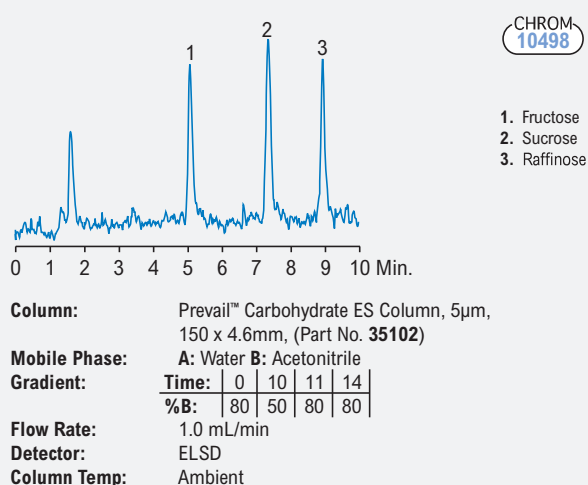
Spiked Urine



Tobacco



Low Level Detection - 10ng on Column



Reveleris® X2中压快速纯化色谱系统用于糖类物质的纯化

Reveleris® X2 中压快速纯化色谱系统分离糖类物质之优势

- * 不管组分有无紫外吸光团均可被内置蒸发光散射检测器检测到
- * 紫外吸收溶剂适用
- * 无需优化蒸发光散射检测器操作参数
- * 内置蒸发光散射检测器灵敏度可根据组分浓度进行调整
- * 蒸发光散射检测器样品损失小于0.1%



Reveleris X2中压快速纯化色谱系统是分离糖类物质的理想选择，其一体化的紫外可见光及内置蒸发光散射检测器为特有设计，并辅以RevealX先进的多重信号处理技术优化馏分收集时间以最大化回收率。

Reveleris® Amino Flash 中压快速纯化色谱柱的优势

- * 高载量色谱柱提供两倍于常规Flash柱的载量，有效缩短时间节约溶剂
- * 200psi压力上限支持更多流速选择
- * 自动柱识别系统可以快速方便地提供实验方法和参数
- * 特别为flash开发的40微米超高纯硅胶填料



Reveleris 氨基柱是糖化学分离纯化的理想选择，为分离提供足够的保留时间和分离度。高载量和高压力上限让化学家在分离纯化中获得更高效率。配合Reveleris X2中压快速纯化色谱系统，这些特别设计制造的柱子将发挥更高效能，使得化学家可以快速便捷的纯化糖类物质。

组合更优！高效色谱柱配合高性能纯化系统从而获得更大产能

Reveleris® 色谱柱



Reveleris® X2 纯化系统



更加增强纯化优势

- * 即插即用
柱识别系统将自动配置运行参数
- * 结果可信
序列号即可柱使用历史
- * 简单纯化
特别对于糖类或脂类无紫外吸收组分，RevealX检测技术将提供最优的纯化结果
- * 更快运行
方法开发向导软件将最优化纯化方法



订购信息

Prevail™ Carbohydrate ES Column

PREVAIL™ HPLC COLUMNS			
Packing	Format	I.D. x Length	Part No.
Carbohydrate ES, 5µm	LC/MS	2.0 x 150mm	35116
	Analytical	4.6 x 150mm	35102
	Analytical	4.6 x 250mm	35101
	Rocket™	7.0 x 53mm	35104
	Prep	10 x 250mm	35115

PREVAIL™ ALL-GUARD™ CARTRIDGES*			
Packing	I.D. x Length	Qty	Part No.
Carbohydrate ES	4.6 x 7.5mm	3	96435
All-Guard™ Guard Cartridge Holder		1	80101

*All-Guard™ Holder required

PREVAIL™ PREP-GUARDS*			
Packing	I.D. x Length	Qty	Part No.
Carbohydrate ES	7.6 x 50mm	ea	35105
Direct-Connect™ Column Coupler		ea	28195

*Direct-Connect™ Column Coupler required

Alltech® 3300 Elsd

ALLTECH® 3300 ELSD*	
Description	Part No.
3300 ELSD 110V – 240V	5135834

Reveleris® X2 Flash Chromatography System

REVELERIS® X2 FLASH CHROMATOGRAPHY SYSTEM	
Description	Part No.
Reveleris® X2 Flash Chromatography System	5164931
Reveleris® X2 UV/Visible Wavelength, Optional Upgrade	5167301
Reveleris® X2 Navigator™ Software Optional Upgrade	5156620

REVELERIS® FLASH CARTRIDGES		
Cartridge Size	Qty.	Amino Part No.
4g	ea	5157330
12g	ea	5157331
40g	ea	5157332
80g	ea	5157333
120g	ea	5157334
330g*	ea	—

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