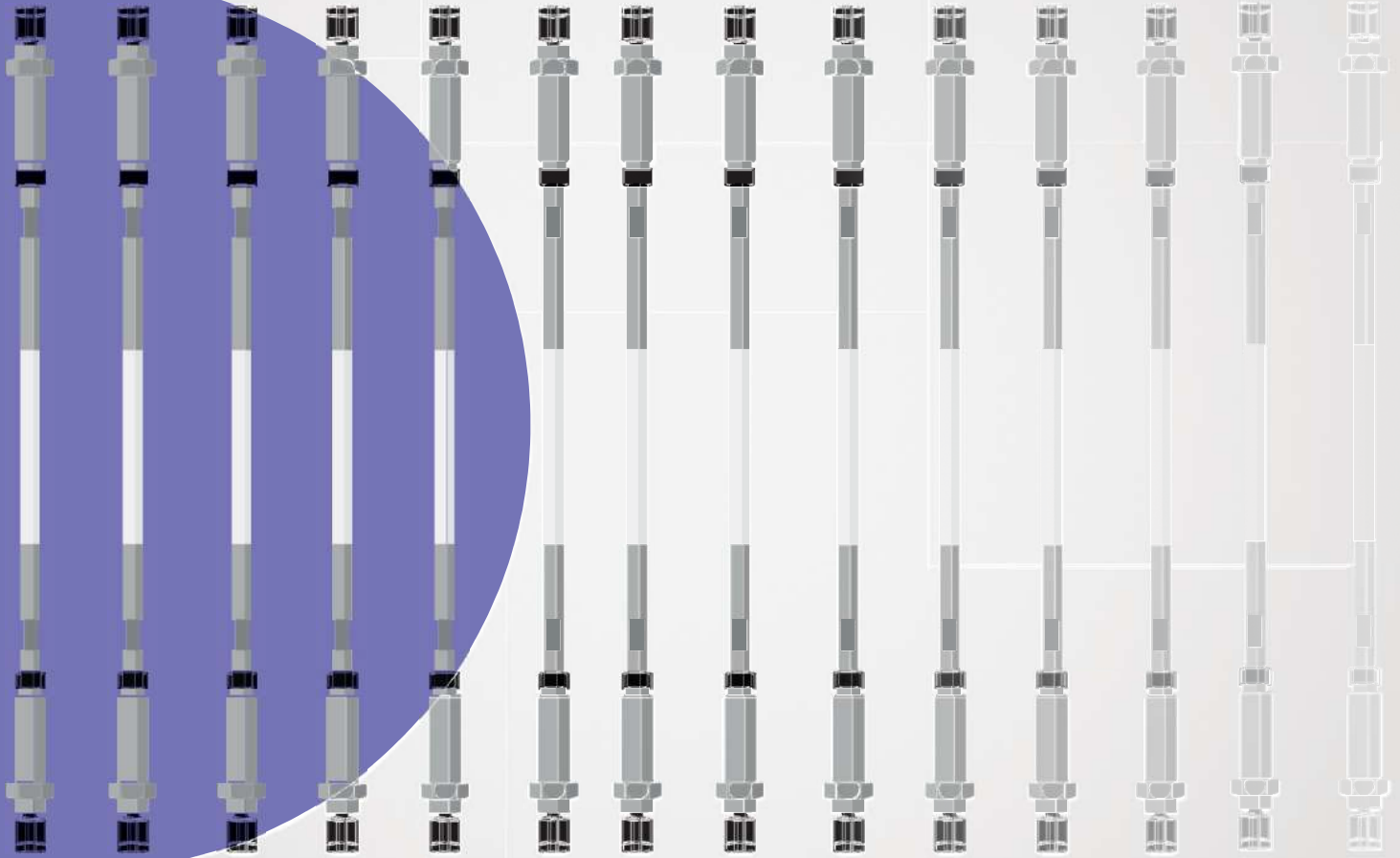


thermo scientific



LINE Official Account

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@analab

您可在LINE獲得優惠券囉!



提供您全方位的分析實驗耗材

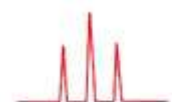
分析級 UHPLC 和 HPLC 管柱

加入立行官方LINE@

1.掃描QR-CODE加入

2.LINE ID輸入@analab

ThermoFisher
SCIENTIFIC



立行科技
Analab Corporation

Gain more resolution with Acclaim columns

在分析鹼性化合物時分不開?

✓ Thermo Scientific™ Acclaim™ Polar Advantage II (PA2) column

在分離相對離子(counter ion-製藥領域)遇到困難嗎?

✓ Thermo Scientific™ Acclaim™ Trinity™ P1 column

需要分析介面活性劑?

✓ Thermo Scientific™ Acclaim™ Surfactant Plus column

兩支樣品峰太過相近分不開?

✓ Thermo Scientific™ Acclaim™ Mixed-mode columns

Broad range of HPLC and UHPLC columns for challenging separation needs

- **General-purpose RP**

使用高表面積管柱來分析複雜樣品 (C18, etc)

- **Mixed-mode**

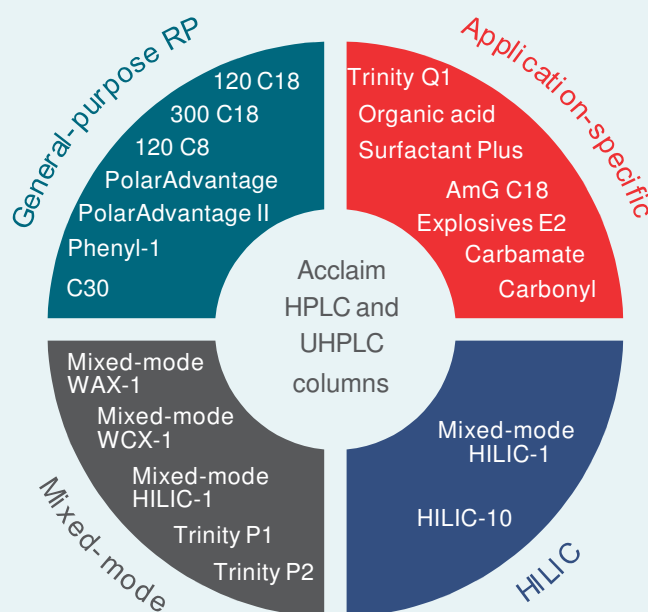
可在一支管柱中分析含有多種不同滯留類型的樣品

- **Application-specific**

特殊應用的獨特管柱：表面活性劑，有機酸，農藥，氨基糖苷，爆炸性殘留物。

- **HILIC**

適合分離極性化合物



Acclaim™ 管柱選擇指南

Please refer to www.thermofisher.com/LCcolumns for more information

			Mixed-Mode										HILIC	SEC	Application-Specific					Example Applications			
		Acclaim 120 C18	Acclaim 120 C8	Acclaim 300 C18	Acclaim Polar Advantage (PA)	Acclaim Polar Advantage II (PA2)	Acclaim C30	Acclaim Phenyl-1	Acclaim Trinity P1	Acclaim Trinity P2	Acclaim Mixed-Mode WAX-1	Acclaim Mixed-Mode WCX-1	Acclaim Mixed-Mode HILIC-1	Acclaim HILIC-10	Acclaim SEC-300 & 1000	Acclaim Organic Acid	Acclaim Surfactant/Plus	Acclaim Carbonyl	Acclaim Explosives E2		Acclaim Carbamate	Acclaim AmG	
General Applications	Neutral Molecules	High hydrophobicity																				Fat-soluble vitamins, PAHs, glycerides	
		Intermediate hydrophobicity																					Steroids, phthalates, phenols, polyphenols
		Low hydrophobicity																					Acetaminophen, urea, polyethylene glycols
	Anionic Molecules	High hydrophobicity																					NSAIDs, phospholipids
		Intermediate hydrophobicity																					Aspirin, alkyl acids, aromatic acids
		Low hydrophobicity																					Small organic acids, e.g. acetic acids
	Cationic Molecules	High hydrophobicity																					Antidepressants
		Intermediate hydrophobicity																					Beta blockers, benzidines, alkaloids
		Low hydrophobicity																					Antacids, pseudoephedrine, biogenic amines
	Amphoteric/Zwitterionic Molecules	High hydrophobicity																					Phospholipids
		Intermediate hydrophobicity																					Amphoteric surfactants, peptides
		Low hydrophobicity																					Amino acids, aspartame, small peptides
	Mixtures of Neutral, Anionic, Cationic Molecules	Neutrals and acids																					Artificial sweeteners
Neutrals and bases																						Cough syrup	
Acids and bases																						Drug active ingredient with counterion	
Neutrals, acids, and bases																						Combination pain relievers, PEG	
Surfactants	Anionic																					SDS, LAS, laureth sulfates	
	Cationic																					Quats, benzylalkonium in medicines	
	Nonionic																					Triton X-100 in washing tank	
	Amphoteric																					Cocoamidopropyl betaine	
	Hydrotropes																					Xylenesulfonates in handsoap	
	Surfactant blends																					Nonionic and anionic surfactants	
Organic Acids	Hydrophobic																					Aromatic acids, fatty acids	
	Hydrophilic																					Organic acids in soft drinks, pharmaceuticals	
Specific Applications	Environmental Contaminants	Explosives																				U.S. EPA Method 8330, 8330B	
		Carbonyl compounds																					U.S. EPA 1667,555,OT-11;CACARB 1004
		Phenols																					Compounds regulated by U.S. EPA 604
		Chlorinated/Phenoxy acids																					U.S. EPA Method 555
		Triazines																					Compounds regulated by U.S. EPA 619
		Nitrosamines																					Compounds regulated by U.S. EPA 8270
		Benzidines																					U.S. EPA Method 605
		Perfluorinated acids																					Dionex TN73
		Microcystins																					ISO 20179
		Isocyanates																					U.S. OSHA Methods 42, 47
Vitamins	Water-soluble vitamins																					Vitamins in dietary supplements	
	Fat-soluble vitamins																					Vitamin pills	
Pharmaceutical Counterions	Anions																					Inorganic anions and organic acids in drugs	
	Cations																					Inorganic cations and organic bases in drugs	
	Mixture of Anions and Cations																					Screening of pharmaceutical counterions	
	API and counterions																					Naproxen Na ⁺ salt, metformin Cl ⁻ salt, etc.	
	Hydrophilic cations																					Antibiotics, aminoglycosides	
Industry	Water soluble Polymers																					PEG, PVP, PAA, PEI,	

Hypercarb HPLC Columns

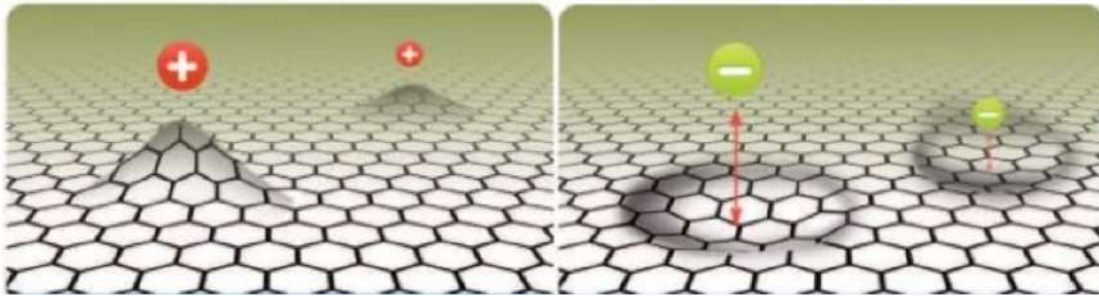
以 **100%多孔性石墨碳** 製成的管柱，有著更好的分析效能!!

適用於分析高極性樣品的分析。

Thermo Scientific™ Hypercarb™ 的管柱，適用於在 **HPLC** 和 **LC-MS** 中，正相以及逆相的分析應用。

- 對**超高極性**分析物有著出色的滯留能力

※適用於成份複雜的分析物



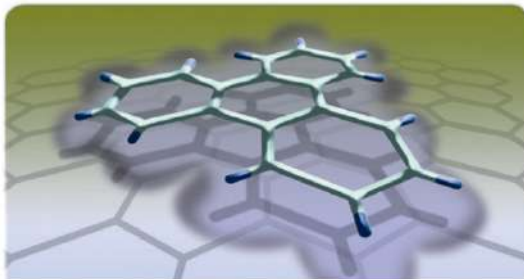
分子極性：

極性分子永久帶電（比如：碳水化合物，或者有羥基、羧基和氨基的化合物），因此可以引起石墨碳表面的極性化，這樣可以加強分子和石墨碳之間的作用。

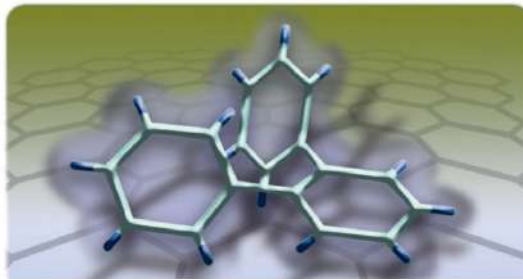
石墨碳是良好的導電材料，當帶正電荷的分子（比如鹼性化合物）或帶負電荷的分子（比如酸性化合物）接近Hypercarb表面時，如圖所示，石墨化碳表面電子遷移形成與分析物相反的電荷，形成靜電作用。極性越強，靜電作用力越強，因此保留越強。

- 對**結構異構物**有著良好的分析能力

※比 Silica-Base 的管柱更有效



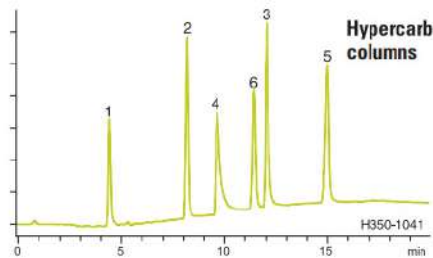
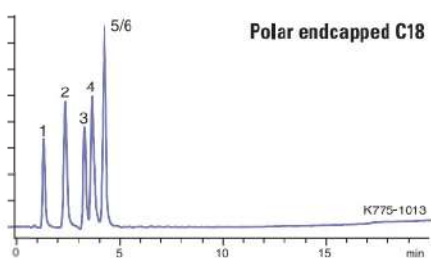
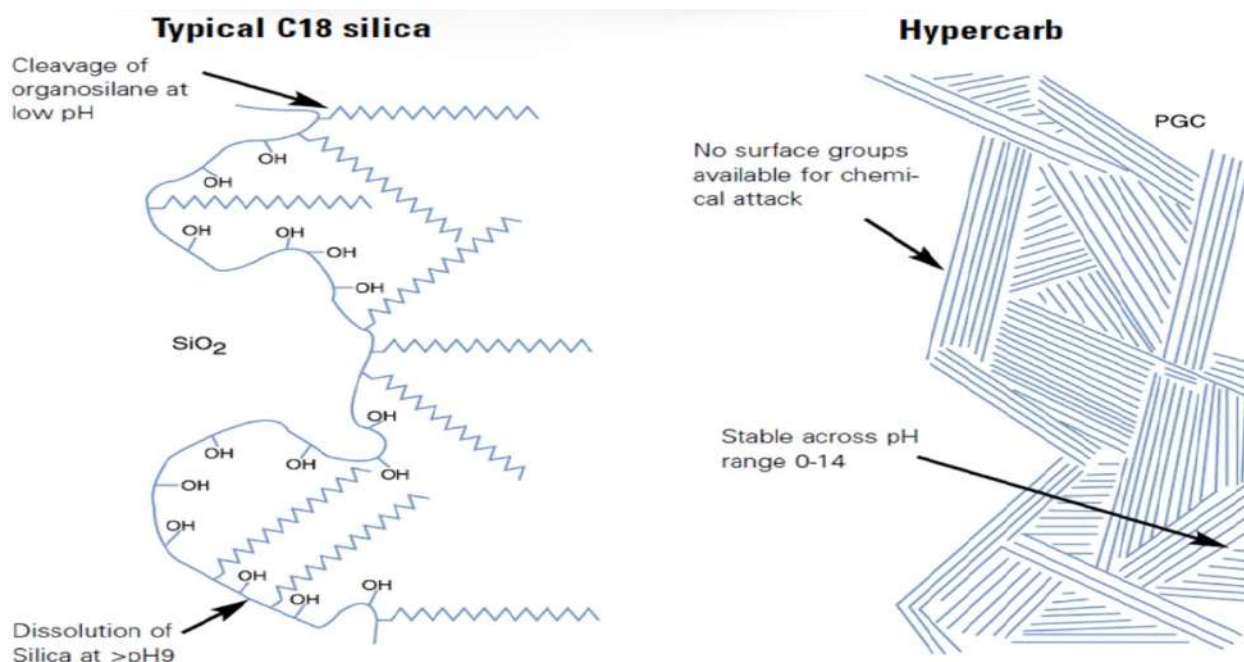
平面結構的分子 & 平面結構的石墨碳
接觸面積高→作用力大→滯留能力強!



立體結構的分子 & 平面結構的石墨碳
接觸面積少→作用力小→滯留能力弱!

- pH 耐受範圍廣：1~14

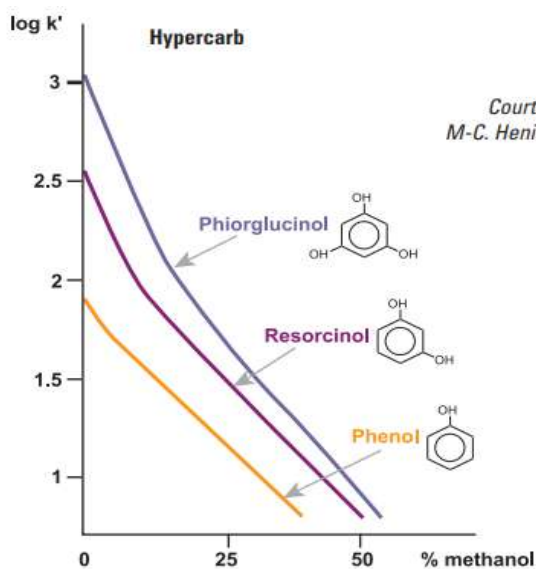
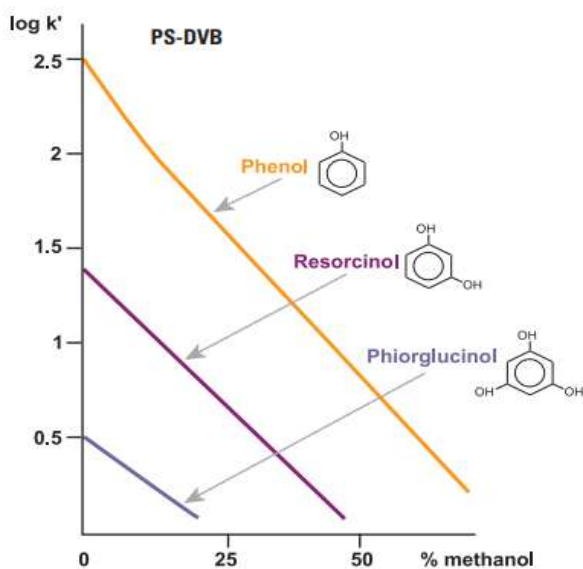
Extended temperature and pressure capabilities



Hypercarb, 5µm, 100 x 0.32mm

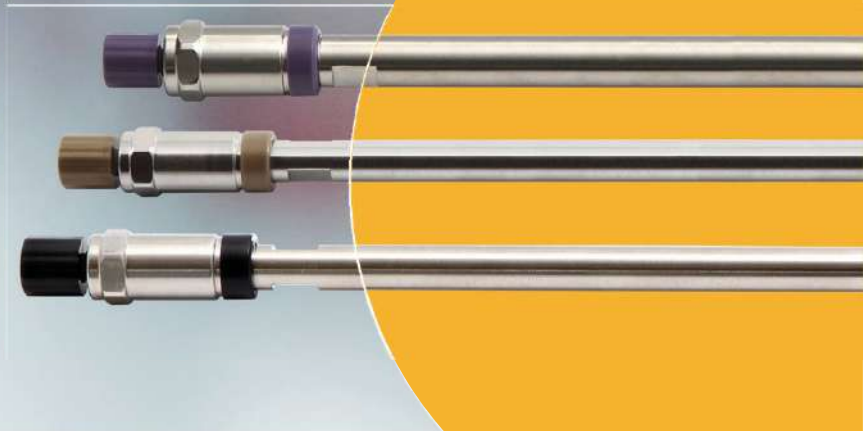
Mobile Phase A:	H ₂ O + 0.1% formic acid
Mobile Phase B:	ACN + 0.1% formic acid
Gradient:	0 to 25% B in 15 minutes
Temperature:	25°C
Flow Rate:	8µL/min
Detection:	UV, 254nm
Analytes:	1. Cytosine 2. Uracil 3. Guanine 4. Adenine 5. Xanthine 6. Thymine

Additional retention is achieved for polar compounds using a Hypercarb column compared to a polar endcapped C18.
Note also the change in elution order.

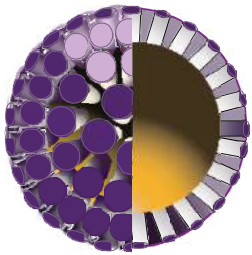


Courtesy V. Coquart and M.-C. Henion, J. Chrom., 1992

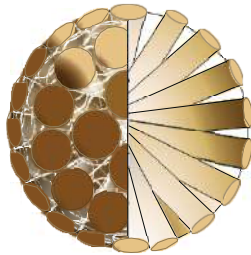
Retention on Hypercarb columns increases as polarity of the analyte increases, which is the opposite of typical reversed phase materials such as PS-DVB



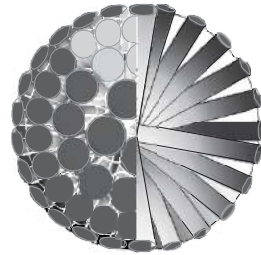
UHPLC & HPLC 管柱產品系列列表



實心核顆粒
Sub-2um 管柱能在LC系統中
提供高解析度。



最高等級的
解析度
分析效率
靈敏度



面對極複雜的樣品也能
有優秀的解析能力。

Accucore 產品系列	
General-purpose RP	
RP-MS	C18
C8	aQ
Polar Premium	Biphenyl
Phenyl-Hexyl	Phenyl-X
PFP	C30
Vanquish C18+	150-C4
150 C18	
HILIC	
HILIC	
150-Amide-HILIC	
Urea-HILIC	

Hypersil GOLD 產品系列	
General-purpose RP	
Hypersil GOLD	
Hypersil GOLD C8	
Hypersil GOLD C4	
Hypersil GOLD Phenyl	
Hypersil GOLD aQ	
Hypersil GOLD PFP	
Hypersil GOLD CN	
Ion Exchange	HILIC
AX	HILIC
Amino	Silica
SAX	

Acclaim 產品系列	
General-purpose RP	Application-specific
120 C18	Trinity Q1
300 C18	Organic Acid
120 C8	Surfactant Plus
PolarAdvantage	AmG C18
PolarAdvantage II	Explosives E2
Phenyl-1	Carbamate
C30	Carbonyl
Mixed-Mode	HILIC
Mixed-Mode WAX-1	Mixed-Mode HILIC-1
Mixed-Mode WCX-1	HILIC-10
Mixed-Mode HILIC-1	
Trinity P1	
Trinity P2	

快速選擇指南

		C18固定相	極性固定相	芳香固定相	親水性固定相
樣品複雜程度 (低-->中)	全孔性	Hypersil GOLD columns	Hypersil GOLD aQ columns	Hypersil GOLD PFP columns	Hypersil GOLD HILIC columns
	實心核	Accucore RP-MS columns	Accucore aQ columns	Accucore Phenyl-Hexyl columns	Accucore HILIC columns
樣品複雜程度 (高)	全孔性	Acclaim 120 C18 columns	Acclaim Polar Advantage II columns	Acclaim Phenyl-1 columns	Acclaim HILIC-10 columns
	實心核	Accucore C18 columns	Accucore Polar Premium columns	Accucore Biphenyl columns	Accucore Amide-HILIC columns