



SFC (Supercritical Fluid Chromatography) Column

YMC
LF-0020E

Alcyon SFC Column

- Available in chiral and achiral stationary phases
- Faster separation with high resolution
- Excellent durability



YMC CO., LTD.

<http://www.ymc.co.jp>

Alcyon SFC Column

Features

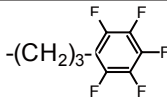
- Available in chiral and achiral stationary phases
- Faster separation with high resolution
- Excellent durability
- Great reduction of solvent consumption

Lineup

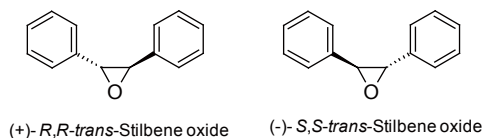
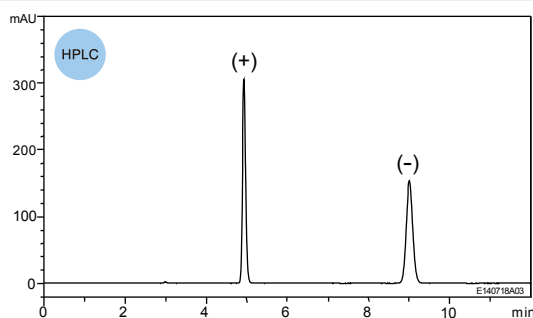
[CHIRAL]

	Alcyon SFC CSP Amylose-C	Alcyon SFC CSP Cellulose-C	Alcyon SFC CSP Amylose-SA	Alcyon SFC CSP Cellulose-SB
Type	Coated type		Immobilized type	
Chiral selector	Amylose tris(3,5-dimethylphenylcarbamate)	Cellulose tris(3,5-dimethylphenylcarbamate)	Amylose tris(3,5-dimethylphenylcarbamate)	Cellulose tris(3,5-dimethylphenylcarbamate)
Particle size	5 μm			
Pressure limit	Inner diameter of 2.1 and 4.6 mm: 30 MPa Inner diameter of 10 and 20 mm: 20 MPa			

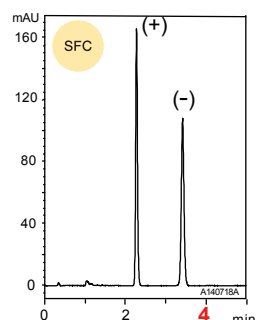
[ACHIRAL]

	Alcyon SFC Triart C18	Alcyon SFC Triart Diol	Alcyon SFC Triart PFP	Alcyon SFC CN	Alcyon SFC SIL
	-C ₁₈ H ₃₇	-CH ₂ CH(OH)CH ₂ OH	 -(CH ₂) ₃ -	-(CH ₂) ₃ -CN	-OH
Base	Organic / inorganic hybrid silica			Silica gel	
Particle size	5 μm				
Pressure limit	Inner diameter of 2.1 and 4.6 mm: 30 MPa Inner diameter of 10 and 20 mm: 20 MPa				

Faster separation with high resolution



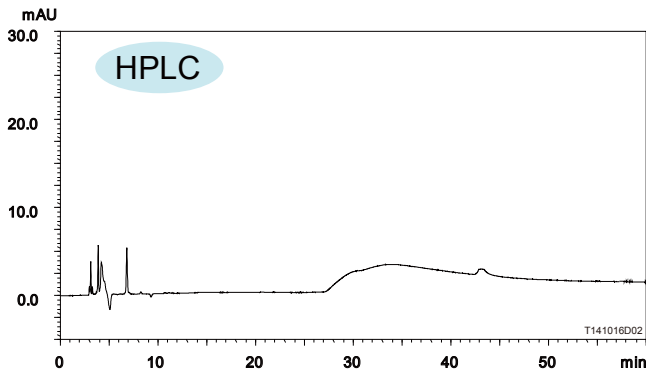
Column : CHIRAL ART Amylose-C
 5 μm, 250 X 4.6 mm I.D.
 Eluent : n-hexane/2-propanol (90/10)
 Flow rate : 1.0 mL/min
 Temperature : 25 °C
 Detection : UV at 220 nm



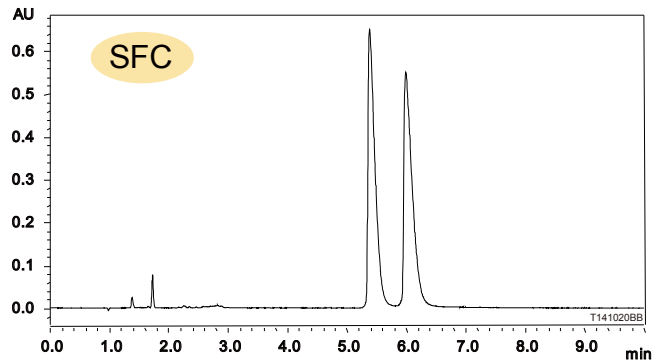
Column : **Alcyon SFC CSP Amylose-C**
 5 μm, 250 X 4.6 mm I.D.
 Eluent : CO₂/methanol (60/40)
 Flow rate : 3.0 mL/min
 Temperature : 40 °C
 Detection : UV at 220 nm
 Back pressure : 17.2 MPa (2500 psi)

Faster chiral separation of trans-Stilbene oxide is achieved on supercritical fluid chromatography compared to HPLC separation. Lower viscosity and a bigger diffusion coefficient of supercritical fluid provide rapid separation of both chiral and achiral compounds.

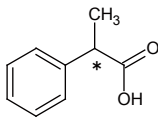
Excellent peak shape under mobile phase without the addition of acid



Column : CHIRAL ART Cellulose-C
5 μ m, 250 X 4.6 mm I.D.
Eluent : *n*-hexane/2-propanol (99/1)
Flow rate : 1.0 mL/min
Temperature : 25 °C
Detection : UV at 220 nm



Column : Alcyon SFC CSP Cellulose-C
5 μ m, 250 X 4.6 mm I.D.
Eluent : CO₂/methanol (98/2)
Flow rate : 3.0 mL/min
Temperature : 35 °C
Detection : UV at 220 nm
Back pressure : 10.3 MPa (2000 psi)



2-Phenylpropionic acid

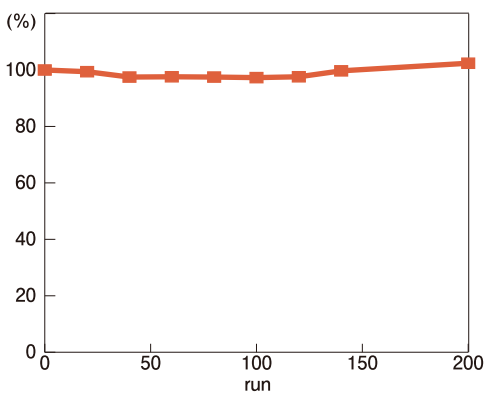
Excellent peak shape of 2-Phenylpropionic acid is obtained on SFC chiral separation.

Under HPLC conditions, peak shape is very broad with mobile phase containing no additive such as acid. On SFC, on the other hand, peak shapes are very good just with mixture of CO₂ and methanol.

It is considered that supercritical carbon dioxide acts as acid.

High column durability under repeated back pressure gradient condition

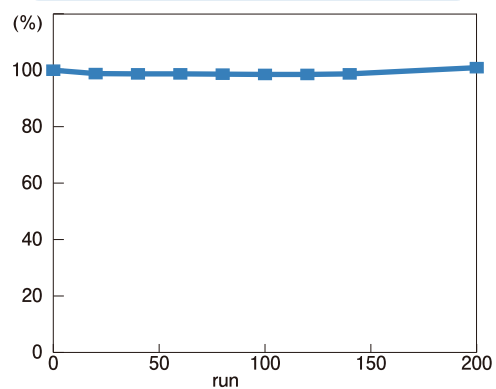
Change rate of theoretical plate number



■ Durability test

Column : Alcyon SFC CSP Amylose-C
5 μ m, 250 X 4.6 mm I.D.
Eluent : CO₂/methanol (80/20)
Flow rate : 1.0 mL/min
Temperature : 50 °C
Back pressure: 10.3 MPa (1500 psi)-24.1 MPa (3500 psi) (0-10 min)
10.3 MPa (1500 psi) (10-13 min)

Change rate of retention time



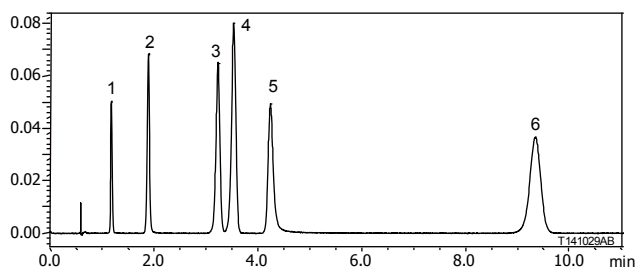
■ Column performance test (every 20 gradient cycles)

Column : Alcyon SFC CSP Amylose-C
5 μ m, 250 X 4.6 mm I.D.
Eluent : CO₂/methanol (80/20)
Flow rate : 3.0 mL/min
Temperature : 50 °C
Detection : UV at 220 nm
Back pressure: 10.3 MPa (1500 psi)
Sample : *trans*-Stilbene oxide

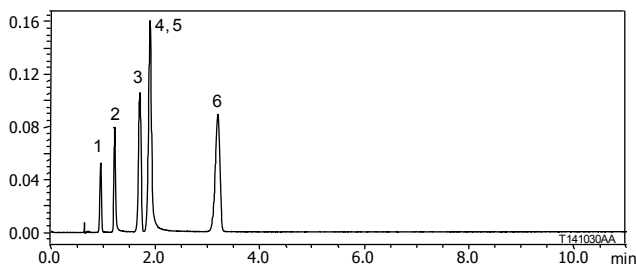
Results of sequential analysis under back pressure gradient condition on Alcyon SFC CSP Amylose-C are shown above. Theoretical plate number and retention time are maintained even after the sequential gradient test. Alcyon SFC column has excellent durability under such tough conditions.

Separation of phenols

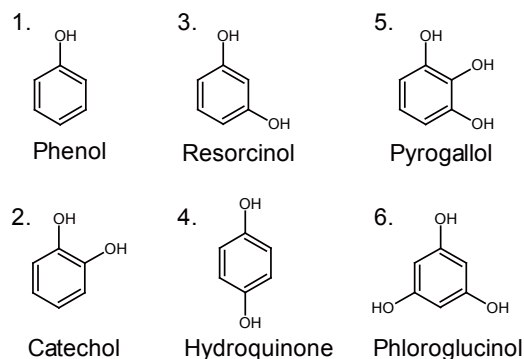
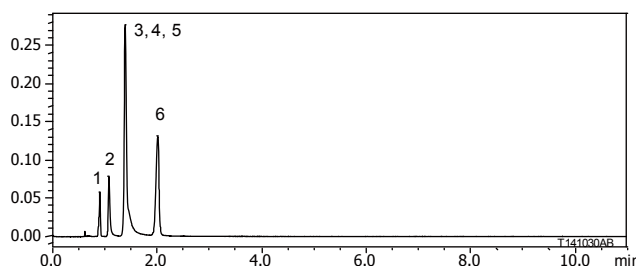
Alcyon SFC
Triart Diol



Alcyon SFC
SIL



Alcyon SFC
CN



Column : 5 μ m, 250 X 4.6 mm I.D.
 Eluent : **CO₂/methanol (88/12)**
 Flow rate : 3.0 mL/min
 Temperature : 30 °C
 Detection : UV at 230 nm
 Back pressure : 10.3 MPa (2000 psi)

Results of analysis of phenols on three kinds of achiral columns are shown.

Triart Diol shows good separation on this case.

Ordering Information

[CHIRAL]

Particle size (μ m)	Column size inner diameter X length (mm)	Product number			
		Coated type		Immobilized type	
		Alcyon SFC CSP Amylose-C	Alcyon SFC CSP Cellulose-C	Alcyon SFC CSP Amylose-SA	Alcyon SFC CSP Cellulose-SB
5	2.1 X 150	KAN99S05-15Q1WTS	KCN99S05-15Q1WTS	KSA99S05-15Q1WTS	KSB99S05-15Q1WTS
	4.6 X 150	KAN99S05-1546WTS	KCN99S05-1546WTS	KSA99S05-1546WTS	KSB99S05-1546WTS
	4.6 X 250	KAN99S05-2546WTS	KCN99S05-2546WTS	KSA99S05-2546WTS	KSB99S05-2546WTS
	10 X 250	KAN99S05-2510WTS	KCN99S05-2510WTS	KSA99S05-2510WTS	KSB99S05-2510WTS
	20 X 250	KAN99S05-2520WTS	KCN99S05-2520WTS	KSA99S05-2520WTS	KSB99S05-2520WTS

[ACHIRAL]

Particle size (μ m)	Column size inner diameter X length (mm)	Product number				
		Alcyon SFC Triart C18	Alcyon SFC Triart Diol	Alcyon SFC Triart PFP	Alcyon SFC CN	Alcyon SFC SIL
5	2.1 X 150	TA12S05-15Q1WTS	TDN12S05-15Q1WTS	TPF12S05-15Q1WTS	CN12S05-15Q1WTS	SL12S05-15Q1WTS
	4.6 X 150	TA12S05-1546WTS	TDN12S05-1546WTS	TPF12S05-1546WTS	CN12S05-1546WTS	SL12S05-1546WTS
	4.6 X 250	TA12S05-2546WTS	TDN12S05-2546WTS	TPF12S05-2546WTS	CN12S05-2546WTS	SL12S05-2546WTS
	10 X 250	TA12S05-2510WTS	TDN12S05-2510WTS	TPF12S05-2510WTS	CN12S05-2510WTS	SL12S05-2510WTS
	20 X 250	TA12S05-2520WTS	TDN12S05-2520WTS	TPF12S05-2520WTS	CN12S05-2520WTS	SL12S05-2520WTS

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