MPLC CHIRAL COLUMNS

CHIRALFLASH® IA/IC/ID/IE/IF

&

Chiral TLC for method development of CHIRALFLASH

2L-ChiralTLC® IA/IC/ID/IE/IF

The new style of Chiral Sepalation

MPLC CHIRAL COLUMNS

High column efficiency

The 20μm CSP packed in CHIRALFLASH is specially designed.
All solvents which are compatible with silica-gel based columns can be used .

Easy to connect

To various MPLCs
Coupling parts for all MPLCs are availble

Easy Method Development

From analytical HPLC to MPLC, the condition can be easily developed based on that of analytical HPLC column.

2L-ChiralTLC®

Achieved the UV detection by applying bilayer form which consisted of chiral layer and silica layer

By applying 2L-ChiralTLC, develop the preparative methods easily and quickly

We prepare IA/IC/ID/IE/IF types of 2L-ChiralTLC to correspond the series of CHIRALFLASH which commercially avaiable

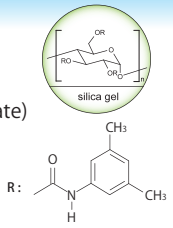
DAICEL CORPORATION

CHIRALFLASH® IA/IC/ID/IE/IF

Specifications

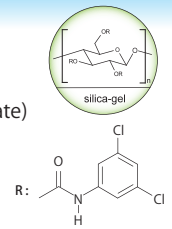
CHIRALFLASH® IA

End cap : 1/4-28 UNF -Female
Chiral recognition reagent : Amylose tris (3,5-dimethylphenylcarbamate)
Particle size : IA 20 μm



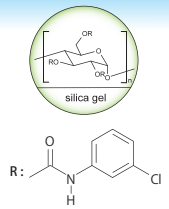
CHIRALFLASH® IC

End cap : 1/4-28 UNF -Female
Chiral recognition reagent : Cellulose tris (3,5-dichlorophenylcarbamate)
Particle size : IC 20 μm



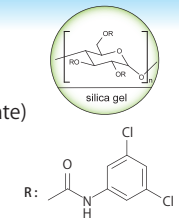
CHIRALFLASH® ID

End cap : 1/4-28 UNF -Female
Chiral recognition reagent : Amylose tris (3-chlorophenylcarbamate)
Particle size : ID 20 μm



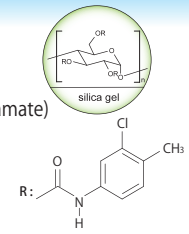
CHIRALFLASH® IE

End cap : 1/4-28 UNF -Female
Chiral recognition reagent : Amylose tris (3,5-dichlorophenylcarbamate)
Particle size : IE 20 μm



CHIRALFLASH® IF

End cap : 1/4-28 UNF -Female
Chiral recognition reagent : Amylose tris (3-chloro-4-methylphenylcarbamate)
Particle size : IF 20 μm



Column size	Paking size (mm) Tube size (mm)	30×100 38×150
Column materials	—	Fluoroplastic
Packing materials	CSP CSP amount (g)	IA 20μm、IC 20μm、ID 20μm、IE 20μm、IF 20μm 40
Bed volume	mL	50
Pressure limitation	MPa	Maximum pressure 1.5
Typical flow rate Sample load	mL/min.	12
Sample load	—	About 50mg ～ 100mg
Mobile phase	Alkanes, Alcohols, Ethyl acetate, THF, dichloromethane, etc.	
Column storage	If not using a column for one week or more, store the column in ethanol	

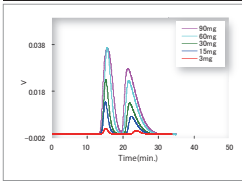
＊ Important reminder
- Don't open the end-cap, otherwise it could negatively affect on separation.
- This column must be used for only investigational perpose.
- The maximum flow rate depends on the mobile phase viscosity (mobile phase composition), and should be adjusted in accordance with the upper limit of the column backpressure (i.e. 1.5 MPa).
- Prior to any preparative work, it is highly recommended that the CHIRALFLASH column be flushed with at least 300ml ～ 600 ml of eluent.
- The column may be cleaned by pumping solvent in the reverse direction (backflush) at half the normal flow rate for that solvent.
- Avoid strong mechanical shock to the column (for example dropping).

Aplication data

Column size (I.D.×Length)	〈CHIRALFLASH® IA〉 30 x 100 mm
Flow rate (mL/min)	12mL/min.

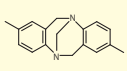
Hexobarbital

n-Hex/2-Propanol = 90/10(v/v)
Detection UV254nm

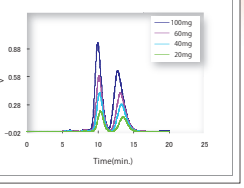


Column size (I.D.×Length)	〈CHIRALFLASH® IC〉 30 x 100 mm
Flow rate (mL/min)	12mL/min.

Tröger's-Base

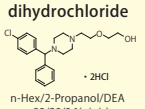


n-Hex/2-Propanol = 90/10(v/v)
Detection UV254nm

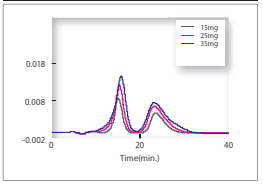


Column size (I.D.×Length)	〈CHIRALFLASH® ID〉 30 x 100 mm
Flow rate (mL/min)	12mL/min.

Hydroxyzine dihydrochloride

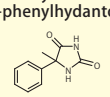


n-Hex/2-Propanol/DEA =80/20/0.1(v/v/v)
α=1.8
Detection UV254nm

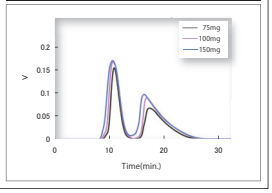


Column size (I.D.×Length)	〈CHIRALFLASH® IE〉 30 x 100 mm
Flow rate (mL/min)	12mL/min.

5-Methyl-5-phenylhydantoin

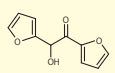


n-Hex/EtOH = 70/30(v/v)
α = 2.4
Detection UV230nm

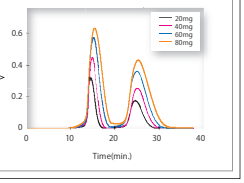


Column size (I.D.×Length)	〈CHIRALFLASH® IF〉 30 x 100 mm
Flow rate (mL/min)	12mL/min.

Furoin



n-Hex/EtOH/MeOH = 70/15/15(v/v/v)
α = 2.2
Detection UV273nm



2L-ChiralTLC® IA/IC/ID/IE/IF

Specifications

Size (wide×length)	200mm×100mm
Layer Thickness	approximately 270μm
Particle size	CSP：20μm
Recommended sample amount	1～5μL
Detection	Silica-gel layer includes a fluorescence indicator (UV254nm). Samples which have ultraviolet adsorption can be obserbed as spots(shadow).

※Important reminder
- The layer may be fallen off the plate depending on organic solvents.
- An impact shock or stress shoud be avoided as, the base material is aluminum.Especially when cutting the plate
- Don't press and rub the surface of TLC plates. Silica-gel layer may be fallen off . When you cut a TLC plate, a protection of the surface of the TLC plate is recommended.

Chiral recognition reagent

Sample spotting

- Spot the sample on "sample apply zone" . ("Sample apply zone" is the bottom end of the TLC plate where only the CSP is coated) Recommended spotting position is within 10 mm of the bottom end of the TLC.
- Before spotting, it is recommended to verify the UV detection of the sample by spotting on the top of the silica-gel layer zone.

If sample spots can't be observed

Spray and dry an organic solvent (e.g. Ethanol) on the surface of TLC. It may help the detection
An accompanying atomizer is for this propose.

For acidic samples or basic samples

For basic samples or acidic samples, it is necessary to add an additive into the developing solvent in order to get appropriate spots, otherwise broad and/or tailing spot form may be observed.

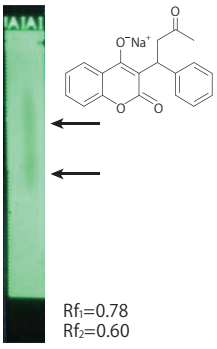
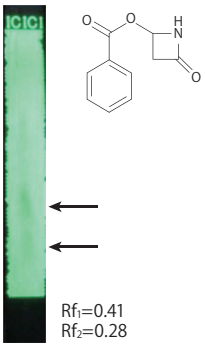
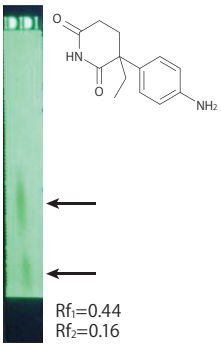
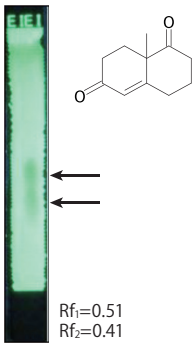
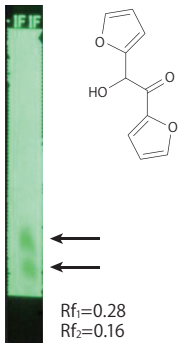
Please follow the bellow procedure.

1. Add 0.1 volume percent of acid (for acidic samples) or base (for basic samples) to developing solvent.
2. Before developing, soak TLC plate for about 1 minute in developing solvent and dry it.
3. Operate developing with the TLC plate prepared in “2” and solvent of “1".

For the samples which don't have enough UV adsorption

Use coloring reagent to detect the spot. (Coloring reagent : phosphomolybdic acid-ethanol, iodine stain, p-anisaldehyde, or ninhydrin)
If you need to use coloring reagent, it is recommended to verify the coloring and the detection of the sample by spotting the sample on a commecialy avaiable silica-based TLC plate before using 2L-ChiralTLC

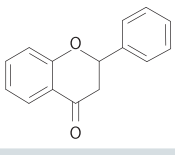
Aplication data

Product name	2L-ChiralTLC® IA	2L-ChiralTLC® IC	2L-ChiralTLC® ID	2L-ChiralTLC® IE	2L-ChiralTLC® IF
Sample name	Warfarin Sodium	4-Benzoyloxy-2-azetidinone	Aminoglutethimide	Wieland Miescher ketone (WMK)	Furoin
Solvent	n-Hex/2-Propanol/TFA =50/50/0.1(v/v/v)	n-Hex/2-Propanol =50/50(v/v)	AE/DEA=100/0.1(v/v)	n-Hex/EtOH=60/40 (v/v) (Two times development)	n-Hex/EtOH/MeOH =75/15/15(v/v/v)
Sample conc.	25,000ppm	100,000ppm	20,000ppm	10,000ppm	50,000ppm
Sample amount	1μL	1μL	1μL	1μL	1μL
Detection	UV 254nm	UV 254nm	UV 254nm	UV 254nm	UV 254nm
	 Rf1=0.78 Rf2=0.60	 Rf1=0.41 Rf2=0.28	 Rf1=0.44 Rf2=0.16	 Rf1=0.51 Rf2=0.41	 Rf1=0.28 Rf2=0.16

※TFA=trifluoroacetic acid, DEA=diethylamine, AE =ethyl acetate

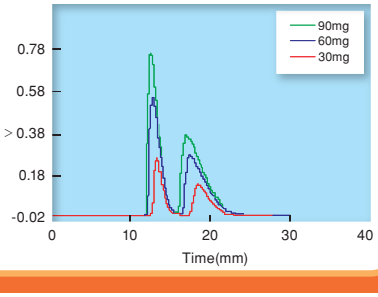
Method development to MPLC

Flavanone



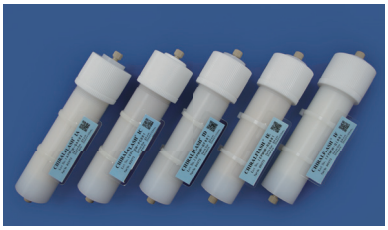
TLC : 2L-ChiralTLC® IA
Solvent：n-Hex/EtOH=90/10(v/v)
Sample conc.：5,000ppm
Sample amount：1μL
Detection：UV 254nm

Mobile phase：CHIRALFLASH® IA
Flow rate：n-Hex/EtOH=90/10(v/v)
Sample conc.：12mL/min.
Sample conc.：30g/L
Injection volume：30, 60, 90mg
Detection：UV 254nm



MPLC CHIRAL COLUMNS

Column name	I.D.(mm)	Length(mm)	Particle size (μm)	CSP amount (g)	Code
CHIRALFLASH® IA	30	100	20	40	80M73
CHIRALFLASH® IC	30	100	20	40	83M73
CHIRALFLASH® ID	30	100	20	40	84M73
CHIRALFLASH® IE	30	100	20	40	85M73
CHIRALFLASH® IF	30	100	20	40	86M73



Analytical HPLC columns for MPLC method development

Column name	I.D.(mm)	Length(mm)	Particle size (μm)	Code
CHIRALPAK® IA (20μm)	4.6	100	20	80223
CHIRALPAK® IC (20μm)	4.6	100	20	83223
CHIRALPAK® ID (20μm)	4.6	100	20	84223
CHIRALPAK® IE (20μm)	4.6	100	20	85223
CHIRALPAK® IF (20μm)	4.6	100	20	86223

Injection Columns

Column name	I.D.(mm)	Length(mm)	Number of columns	Code
Injection column S	15	44	10	00M01
Injection column M	20	75	10	00M02
Injection column L	26	80	10	00M03

Column Adaptor For Injection Columns

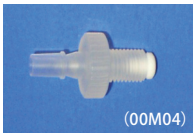
Items	Code
Column Adaptor S	00M10
Column Adaptor M	00M11
Column Adaptor L	00M12

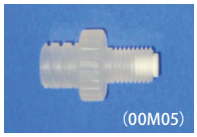
Column joint for CHIRALFLASH®

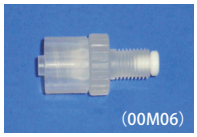
Items	Specification	Code
Column Rack Adapter	1/4-28UNF	00M04
Injection Adapter	1/4-28UNF	00M05
Lure Lock Adapter(Male)	1/4-28UNF	00M06
Syringe Union	1/4-28UNF	00M07
"LL Adapter [INTRM Connector -Female]"	1/4-28UNF	00M08
"LL Adapter [INTRM Connector -Male]"	1/4-28UNF	00M09

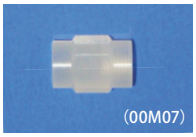
Column Holder For Injection Columns

Items	Code
Injection columns S	00M13
Injection columns M	00M14
Injection columns L	00M15


(00M04)
Column Rack Adapter


(00M05)
Injection Adapter


(00M06)
Lure Lock Adapter(Male)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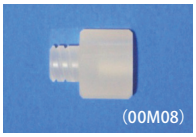
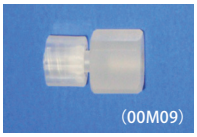
Syringe Union


(00M08)
LL Adapter
[INTRM Connector -Female]


(00M09)
LL Adapter
[INTRM Connector -Male]

2L-ChiralTLC®

Items	Sheet size (mm)	Nunmber of sheets	Code
2L-ChiralTLC® 5 types	200×100	5	5ST5A
2L-ChiralTLC® IA	200×100	2	80T2A
2L-ChiralTLC® IC	200×100	2	83T2A
2L-ChiralTLC® ID	200×100	2	84T2A
2L-ChiralTLC® IE	200×100	2	85T2A
2L-ChiralTLC® IF	200×100	2	86T2A

※5types includes IA, IC, ID, IE, IF.

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