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1.51333.0001

LiChroCART®**LiChroCART® 250-4 ChiraDex®
(5 µm)**

ChiraDex® is a stationary phase based on spherical particles of silica gel with β -cyclodextrin covalently bonded. Cyclodextrins are naturally occurring oligosaccharides with hydrophobic cavities, which enable them to form inclusion complexes with organic substances in aqueous solutions. These properties make β -cyclodextrin an ideal stationary phase in chromatography. As β -cyclodextrin is built from chiral glucose units, it is possible to use β -cyclodextrin as a chiral selector in the separation of enantiomers.

Specifications

Column: LiChroCART® 250-4 ChiraDex®

Particle size: 5 µm

Pore diameter: 100 Å

Specific surface area: 300–360 m²/g

Optimal flow rate: 0.8 – 1.0 mL/min

pH-stability: pH 3.0–7.5

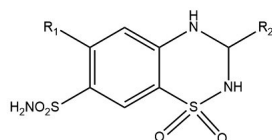
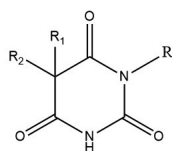
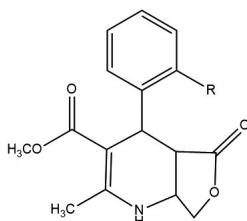
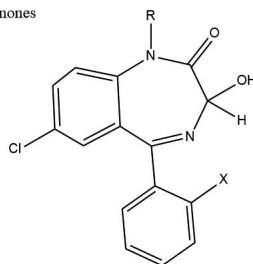
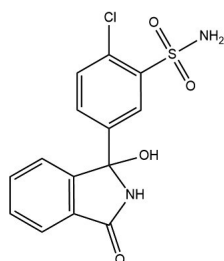
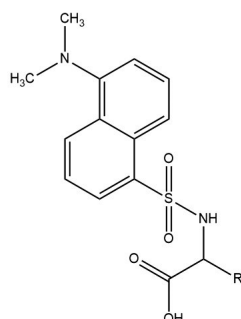
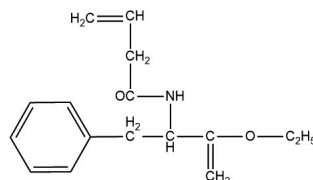
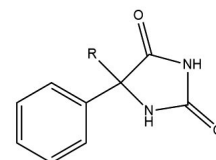
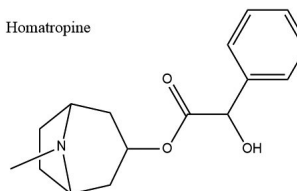
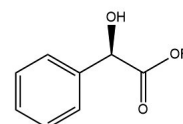
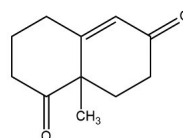
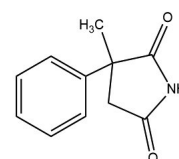
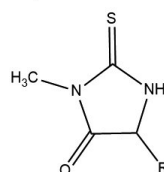
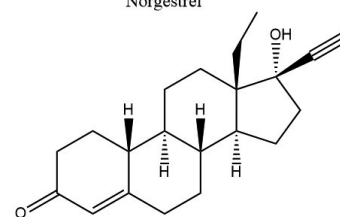
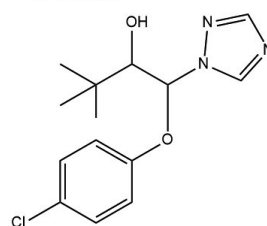
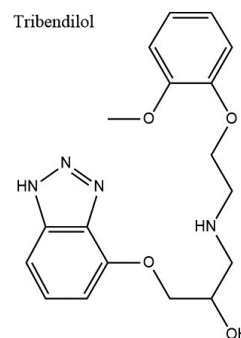
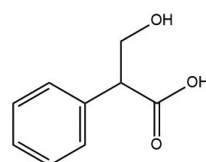
Column equilibration

LiChroCART® 250-4 ChiraDex® is supplied in methanol/water (40/60) (v/v) and should be stored in the same solvent mixture. Before use, methanol/water (50/50) (v/v) should be pumped through the column for 30–60 minutes with a flow rate of 0.8 mL/min.

Conditions for chromatographic separations

For separations of enantiomers with ChiraDex®, mixtures of methanol and water or buffer (methanol/water or buffer: 5/95–60/40) (v/v) have been proven as well suited. The organic solvent plays an important role on enantioselectivity. The higher the polarity of the organic solvent (methanol > ethanol > acetonitrile), the better is the separation of enantiomers. The separation of optical isomers can be improved by using buffers (especially Na₂HPO₄/NaH₂PO₄) or 0.1% TEAA (triethylamine acetate). The separation of enantiomers is dependent on the concentration of the buffer and on pH. The enantioselectivity of ChiraDex® can be altered by varying the temperature.

Racemates, that had been separated with ChiraDex®:

Barbiturates**Benzodiazepinones****Chlorthalidone****Dansylamino Acids****N-Acryloylphenylalanineethyl ester****Hydantoin****Homatropine****Mandelic Acid Esters****8-alpha-Methyl-1,2,3,4,7,8-alpha-octahydronaphthalene-1,6-dione****alpha-Methyl-alpha-phenylsuccinimide****Methylthiohydantoinamino acids (MTH-amino acids)****Norgestrel****Triadimenol****Tribendilol****Tropic Acid**

Handling of LiChroCART® HPLC cartridges

LiChroCART® cartridges are used with re-usable endfittings (manu-CART®) which fit different cartridge lengths (75 mm–250 mm) and inner diameters (4.6 mm, 4 mm, 3 mm or 2 mm). The endfittings (manu-CART®) are designed to allow the cartridges to be hand-sealed at normal working pressures up to 200 bar without the need for any tools. Only at higher pressures may further tightening with a wrench become necessary.

CARTRIDGE EQUILIBRATION

LiChroCART® cartridges were flushed with acetonitrile/water. As they can dry out during stockings and shipping they have to be activated by purging 10–20 column volumes of pure organic component (e.g. acetonitrile, methanol) before equilibrating them with the mobile phase. Please increase the flow rate gradually stepwise from 0 mL/min to the desired value. If the eluent contains a buffer salt, you have to flush the cartridges with water after the activation step and before the equilibration step.

Mounting the manu-CART® to a LiChroCART® cartridge without precolumn

The manu-CART® (Cat. No. 1.51486.0001) consists of the following pieces. Check that you have all of these pieces before you begin to assemble your column.

No.	Description	Quantity
1	Cap nut	2
2	Spin collet	4
3	End fitting	2

The following procedure describes how to fit the pieces to just one end of your cartridge. Repeat steps 1–4 for the other end.

- 1. Insert the cartridge through the end fitting, so that the outer thread is at the outermost end.
- 2. Place 2 split collets around the neck of the cartridge as shown in Figure 1.
- 3. Push the end fitting up over the 2 split collets.
- 4. Screw the end cap over the assembled endfitting. Tighten finger tight.
- 5. When you install your column into the flow path of your LC, tighten the end fittings leak tight using wrenches.

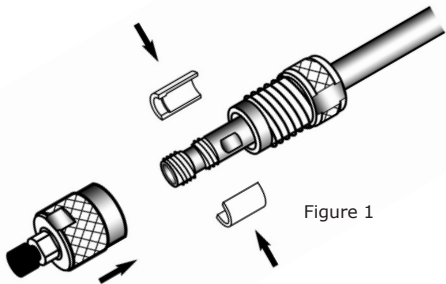


Figure 1

Mounting the manu-CART® to a LiChroCART® cartridge precolumn

- 1. Insert the cartridge through the end fitting, so that the outer thread is at the outermost end.
- 2. Place 2 split collets around the neck of the cartridge as shown in Figure 2.
- 3. Place the guard column cartridge inside the space at the end of the collets.
- 4. Push the end fitting up over the assembled guard column cartridge.
- 5. Screw the end cap over the end fitting. Tighten finger tight.
- 6. When you install your combined column and guard column into the flow path of your LC, tighten the end fittings leak-tight using wrenches.

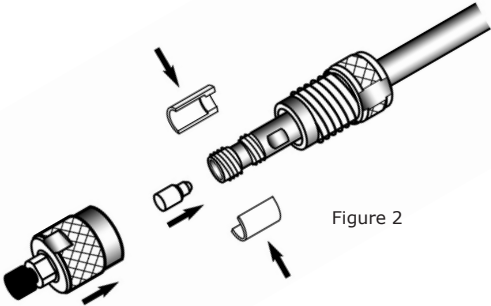


Figure 2

Status: 2024-08-08
Made in Germany