# IATROBEADS

## (packing material for Liquid Chromatography)

"IATROBEADS" consists of porous fine silica gel uniformly in sphere and particle size to provide excellent separation performance.

### Characteristics

| | IATROBEADS 6RS-8005 | IATROBEADS 6RS-8010 | IATROBEADS 6RS-8060 | IATROBEADS 6RS-80100 |
|---|---|---|---|---|
| Apparent density (g/ml) | 0.42 | 0.46 | 0.58 | 0.51 |
| pH | 7.1 | 7.1 | 7.1 | 7.1 |
| Micropore volume (ml/g) | 0.87 | 0.88 | 0.80 | 0.81 |
| Average pore size (Å) | 80 | 80 | 80 | 80 |
| Average particle size ($\mu$m) | 5 | 10 | 60 | 100 |
| Water content (Less then %) | 0.15 | 0.3 | 1.5 | 1.5 |

IATRON LABORATORIES, INC.

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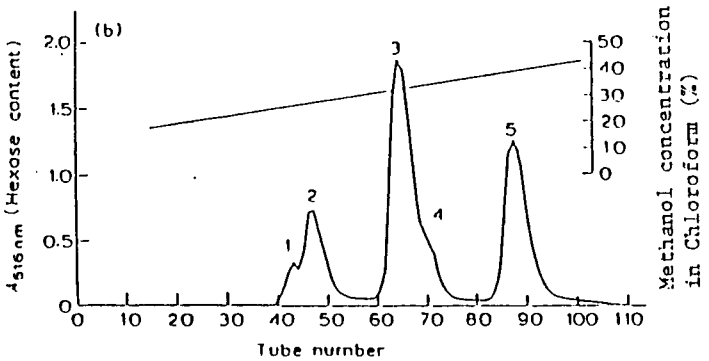
## I A T R O B E A D S  6 R S - 8 0 6 0

### CHARACTERISTICS

| | |
|---|---|
| Apparent density | 0.58 g/mL |
| pH | 6.8 |
| Water-soluble substances | 0.15 % |
| Surface area | 420 $m^2/g$ |
| Micropore volume | 0.85 mL/g |
| Mean diameter of micropores | 80 A |
| Water content | Less then 2.0 % |
| Average particle size | 60 $\mu$m |

### Separation by "IATROBEADS"

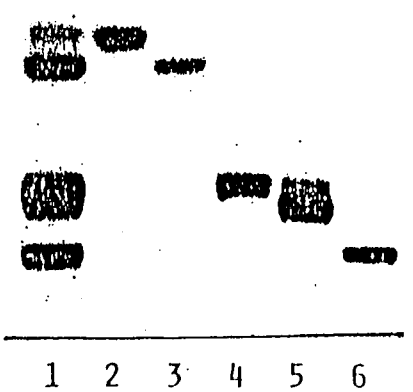
Elution patterns of human erythrocyte glycolipids from IATROBEADS 6RS-8060 Column.




Solvent system:
$CHCl_3$:$CH_3OH$:$H_2O$
83:16:0.5 to
55:42:3 (linear gradient)

Peak 1. CDH-I 2. CDH-II 3. CTH-I
4. CTH-II 5. Glob-I

Thin-layer chromatogram of glycolipids isolated by IATROBEADS 6RS-8060 Column.




$CHCl_3$:$CH_3OH$:3.5M $NH_4OH$
65: 35 : 8

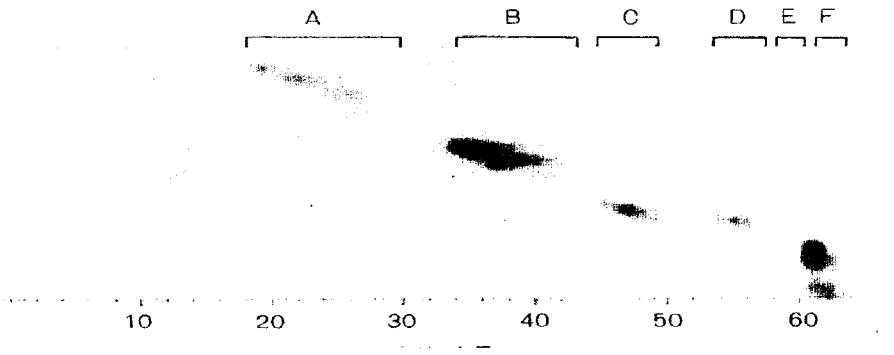
1. CDH,CTH Glob-I
2. CDH-I 3. CDH-II
4. CTH-I 5 CTH-II
6. Glob-I

Reference: Ando,S.,Isobe,M.and Nagai,Y.
(1976)Biochim.Biophys.Acta 424,98-105

# Silica-gel ( Iatrobeads ) column chromatography

【 Experiment】 Silica-gel column chromatography

(1) Suspend 80 gr. of Iatrobeads ( 6RS-8060 ) in C-M-W ( 80:15:0.5 ) , then agitate the suspension in ultrasonic water bath.
   → Air bubbles will continue being generated for long time. But, only one (1) to two (2) minute-agittation will enable to prevent from air bubbling in the column during experiment.
(2) Pack the suspended Iatrobeads ( solid volume : 160 ml ) into a column ( 1.8 cm $\phi$ × 60 cml ), and hence rinse the Iatrobeads in it with 200 ml of the same solvent.
(3) Dissolve 0.5 g of glycolipids mixture in 5 ml of same solvent and put it on the column.
(4) Elute the glycolipids mixture by means of concentration gradient method using 500 ml of C-M-W ( 85:15:0.5 ) as the first solvent and 600 ml of C-M-W ( 20:80:5 ) as the second solvent.
(5) Almost pure standard component from monohexylceramide to Forssmann glycolipid can be obtained component by component in onece column chromatography by analyzing each 5 ml of elute on thin layer chromatography one by one which brings the separation pattern shown below.



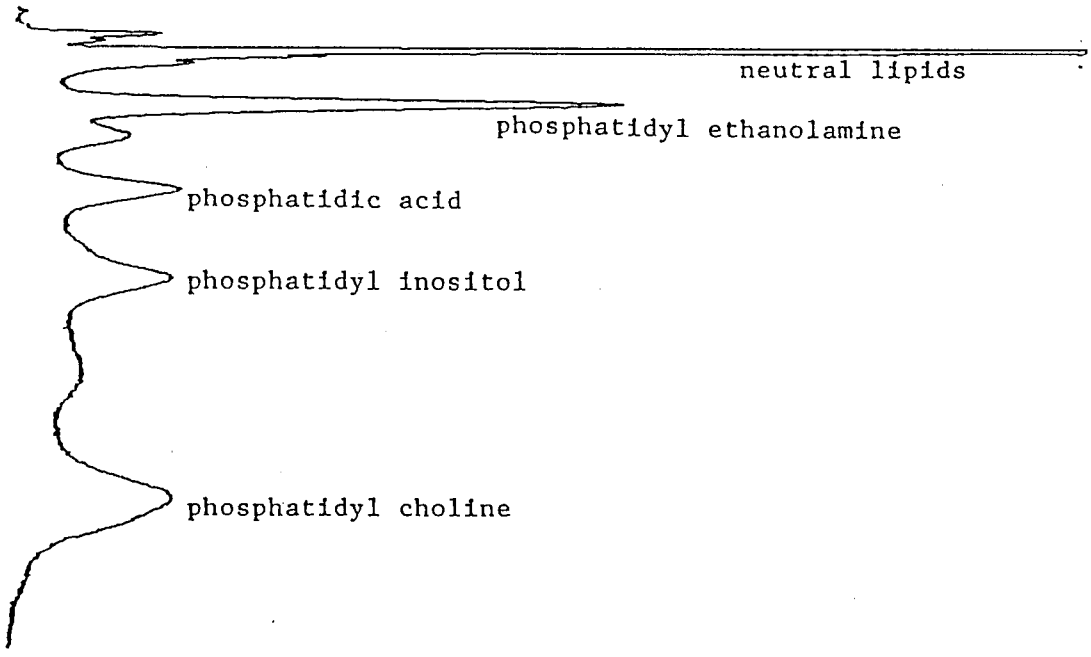

A : monohexyleceramide  B : dihexyleceramide  C : trihexyleceramide
D : globoside  E : Forssmann glycolipid  F : neutral lipids with more than 6 sugers

Fig. Separation of glycolipids by concentration gradient method

Reference: Dr. S. Ando – Tokyo Metropolitan Institute of Gerontology

# Separation of Lipids

Column: Packed IATROBEADS 6RSP-8010 (4.6 × 250mm)




Sample: Lipids Mixture

Eluent: n-Hexane:Isopropyl Alcohol:0.2M Acetic acid Buffer(pH4.2)

8 : 8 : 1

Detector: 206nm

Flow rate: 2 ml/min

Equipment: Hitach model L-6000

# Regeneration of Iatrobeads (6RS-8060)

The used Iatrobeads are regenerated by the following treatment procedure, and then can be used several times as almost new Iatrobeads.

(1) Agitate the 0.1N-HCl suspension of Iatrobeads in the Erlenmeyer flask.
(2) Filtrate the suspension on the funnel to remove the HCl solution.
(3) Rinse the Iatrobeads on the funnel with distilled water.
(4) Repeat the steps from (1) to (3) three times.
(5) Then, add distilled water on the Iatrobeads in the funnel repeatedly until outflow water becomes neutral by checking with PH-test paper.
(6) Activate the Iatrobeads treated for 30 minutes at 120℃ in the drying oven.