

# 切换法色谱柱

切换法预处理柱能够在线富集微量物质和在线清除大分子异物(如蛋白质)。推荐选用该色谱柱分析含生物体液样品的化学物质/代谢物。

## ■ 特点

- PK系列**
- 能捕集亲疏水两性物质,且去除率高
  - 能去除蛋白质



- GF/GS系列**
- 蛋白质的去除率比PK柱高

\* GF/GS柱蛋白质去除效果好,但不适合吸收亲水性物质。因此需要捕集亲水性物质时,请选用PK柱。

- ODP-51**
- 与ODS基质预处理柱相比,支持更宽的pH值范围(pH值2~12)

- SP-80**
- 用于捕集阳离子化学物质

## ■ 柱切换法卡套柱和柱套

订货号	产品名称	粒径(μm)	孔径(Å)	规格 I.D. x L (mm)	储存溶剂	个/箱
F8700000	MSPak PK-2A 2p	30	30	2.0 x 10	H <sub>2</sub> O	2
F8700011	MSPak PK-2A 5p	30	30	2.0 x 10	H <sub>2</sub> O	5
F8700012	MSPak PK-4A 2p	30	30	4.0 x 10	H <sub>2</sub> O	2
F8700013	MSPak PK-4A 5p	30	30	4.0 x 10	H <sub>2</sub> O	5
F8700001	MSPak HLD	—	—	(PK的柱套)	—	1

\*PK柱为卡套柱,因此在使用前应先装入柱套"MSpak HLD"。

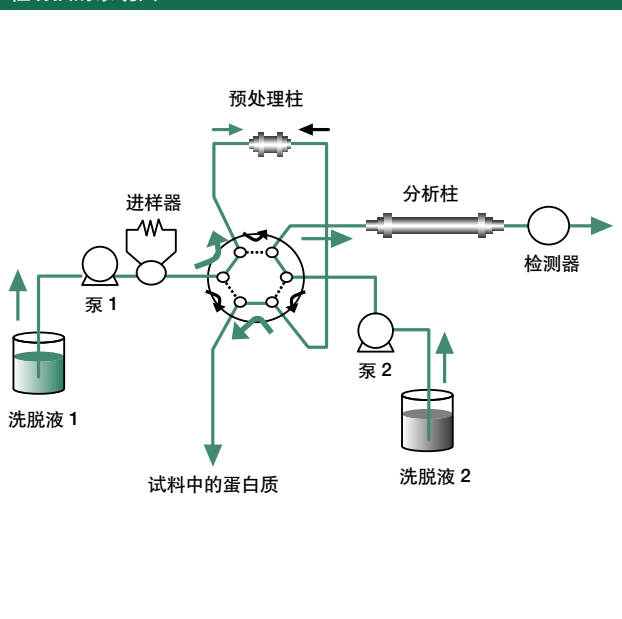
基质:含N-乙基乙酰胺的亲水性共聚物

## ■ 柱切换法色谱柱

订货号	产品名称	塔板数 (TP/column)	键合相	基质	粒径(μm)	孔径(Å)	规格 I.D. x L (mm)	储存溶剂
F8700015	MSPak GF-4A	—	—	聚乙烯醇	9	400	4.6 x 10	H <sub>2</sub> O
F7600100	MSPak GF-310 4B	≥ 3,000	—	聚乙烯醇	5	400	4.6 x 50	H <sub>2</sub> O
F7600110	MSPak GF-310 4D	≥ 10,000	—	聚乙烯醇	5	400	4.6 x 150	H <sub>2</sub> O
F7600120	MSPak GF-310 2D	≥ 5,500	—	聚乙烯醇	5	400	2.0 x 150	H <sub>2</sub> O
F7600130	MSPak GS-320 4B	≥ 2,000	—	聚乙烯醇	6	400	4.6 x 50	H <sub>2</sub> O
F7600140	MSPak GS-320 4D	≥ 7,000	—	聚乙烯醇	6	400	4.6 x 150	H <sub>2</sub> O
F7600150	MSPak GS-320 2D	≥ 4,000	—	聚乙烯醇	6	400	2.0 x 150	H <sub>2</sub> O
F6710032	Asahipak ODP-51 4B	≥ 2,000	十八烷基	聚乙烯醇	5	100	4.6 x 50	H <sub>2</sub> O/CH <sub>3</sub> CN=35/65
F6118251	MSPak SP-80 4B	≥ 800	磺基丙基	聚羟基甲基丙烯酸酯	8	5,000	4.6 x 50	50mM Na <sub>2</sub> SO <sub>4</sub> aq.

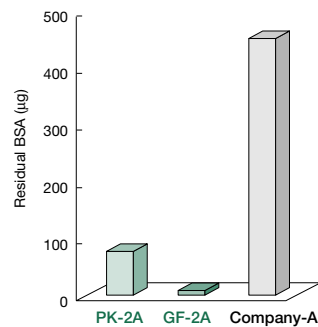
\*若需定制,请联系Shodex或就近联系我们的经销商。

柱切换的系统图



预处理柱的蛋白质去除率

Column	Removal rate of proteins
PK-2A	99.62%
GF-2A*	99.80%
Company-A	97.68%



(Pretreatment)  
 Eluent : 10mM Ammonium acetate buffer(pH7.0)  
 Flow rate : 0.5mL/min  
 Column temp. : Room temp.

(Analysis)  
**Column** : Shodex PROTEIN KW-604S  
 Eluent : 0.1% TFA in (H<sub>2</sub>O/CH<sub>3</sub>CN=50/50)  
 Flow rate : 0.5mL/min  
 Detector : UV(280nm)  
 Column temp. : Room temp.  
 Switching time : 5min

特别订货  
 \*GF-2A: Custom-made column of GF-4A (2.0mmI.D. x 10mm)

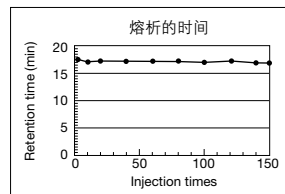
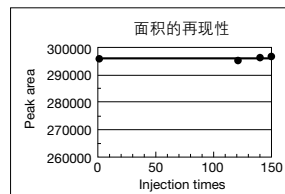
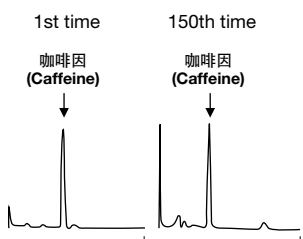
PK-2A柱对药品的完全回收率

Sample	Recovery (%)	Sample	Recovery (%)
Acetaminophen	115	Biperiden	99
Caffeine	106	Imipramine	97
Barbital	94	Proprietary	90
Primidone	91	Trihexyphenidyl	91
Trimethadione	137	Clonazepam	96
Metharbital	94	Flunitrazepam	97
Bromvalerylurea	94	Benzoylacetone	96
Ethanzamide	98	Benzoylhydrazone	83
Phenobarbital	96	Chlorpheniramine	111
Phenacetin	108	Propranolol	97
Flumazenil	93	Mesaconine	118
Warfarin	81	Nimetazepam	90
Bromazepam	102	Amitriptyline	93
Chlormezanone	92	Sildenafil citrate	95
Pentobarbital	93	Hydroxyzine	99
Amobarbital	93	Fludiazepam	97
Acetylpheneturide	92	Trimipramine	107
Carbamazepine	97	Chlorpromazine	77
Clofedanol	91	Haloperidol	99
4-Hydroxytriazolam	91	Diazepam	97
Secobarbital	97	Levomopromazine	96
1-Hydroxymethyltriazolam	90	Bromperidol	89
Mephobarbital	99	Clomipramine	95
Glutethimide	93	Mianserin	92
Estazolam	101	Cloxacolam	91
Indomethacin	93	Clotiazepam	96
Alprazolam	99	Promethazine	92
Oxazepam	97	Haloxazolam	93
Triazolam	96	Carpipramine	99
Chlordiazepoxide	133	Perfenazine	86
Phenytoin	99	Oxazolam	99
Flurazepam	106	Timiperone	88
Hypaconitine	97	Lofepamine	65
Desipramine	109	Zotepine	92
Etizolam	105	Thioridazine	97
Aconitine	110	Medazepam	91
Brotizolam	97	Clocapramine	95
Nitrazepam	97	Bromocriptine	80
Maprotyline	90	Diphenhydramine	93
Nortriptyline	86		

(Adsorption)  
 Eluent : 10mM Ammonium acetate buffer(pH7.0)  
 Flow rate : 0.5mL/min  
 (Elution)  
 Eluent : 10mM Ammonium acetate buffer(pH7.0)/CH<sub>3</sub>CN  
 Flow rate : 0.5mL/min  
 Detector : UV(220nm)  
 Column temp. : Room temp.  
 Switching time : 5min

用柱切换法对BSA中的咖啡因的分析

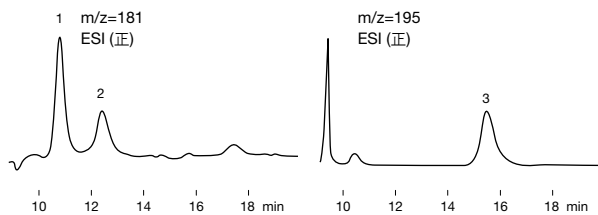
样品 : 20μL  
 咖啡因(Caffeine) 1μg/mL in BSA 200mg/mL



**Column** : (Pretreatment) Shodex MSPak PK-4A  
 (Analysis) Shodex Asahipak ODP-40 4D  
 Eluent : (Pretreatment) 20mM Ammonium acetate buffer(pH5.0)  
 (Analysis) 10mM Ammonium acetate buffer(pH5.0)/CH<sub>3</sub>CN=90/10  
 Flow rate : 1.0mL/min  
 Detector : UV(254nm)  
 Column temp. : Room temp.  
 Switching time : 10min

用柱切换法对甲基黄嘌呤的分析

样品 : 5μL, Methylxantines 250ng/mL each in BSA 200mg/mL  
 1. 茶碱 (Theophylline)  
 2. 可可豆碱 (Theobromine)  
 3. 咖啡因 (Caffeine)



**Column** : (Pretreatment) Shodex MSPak PK-4A  
 (Analysis) Shodex RSpak DE-213  
 Eluent : (Pretreatment) 10mM Ammonium acetate buffer(pH4.5)  
 (Analysis) 10mM Ammonium acetate buffer(pH4.5)/CH<sub>3</sub>CN=90/10  
 Flow rate : (Pretreatment) 1.0mL/min  
 (Analysis) 0.2mL/min  
 Column temp. : 40°C  
 Switching time : 5min