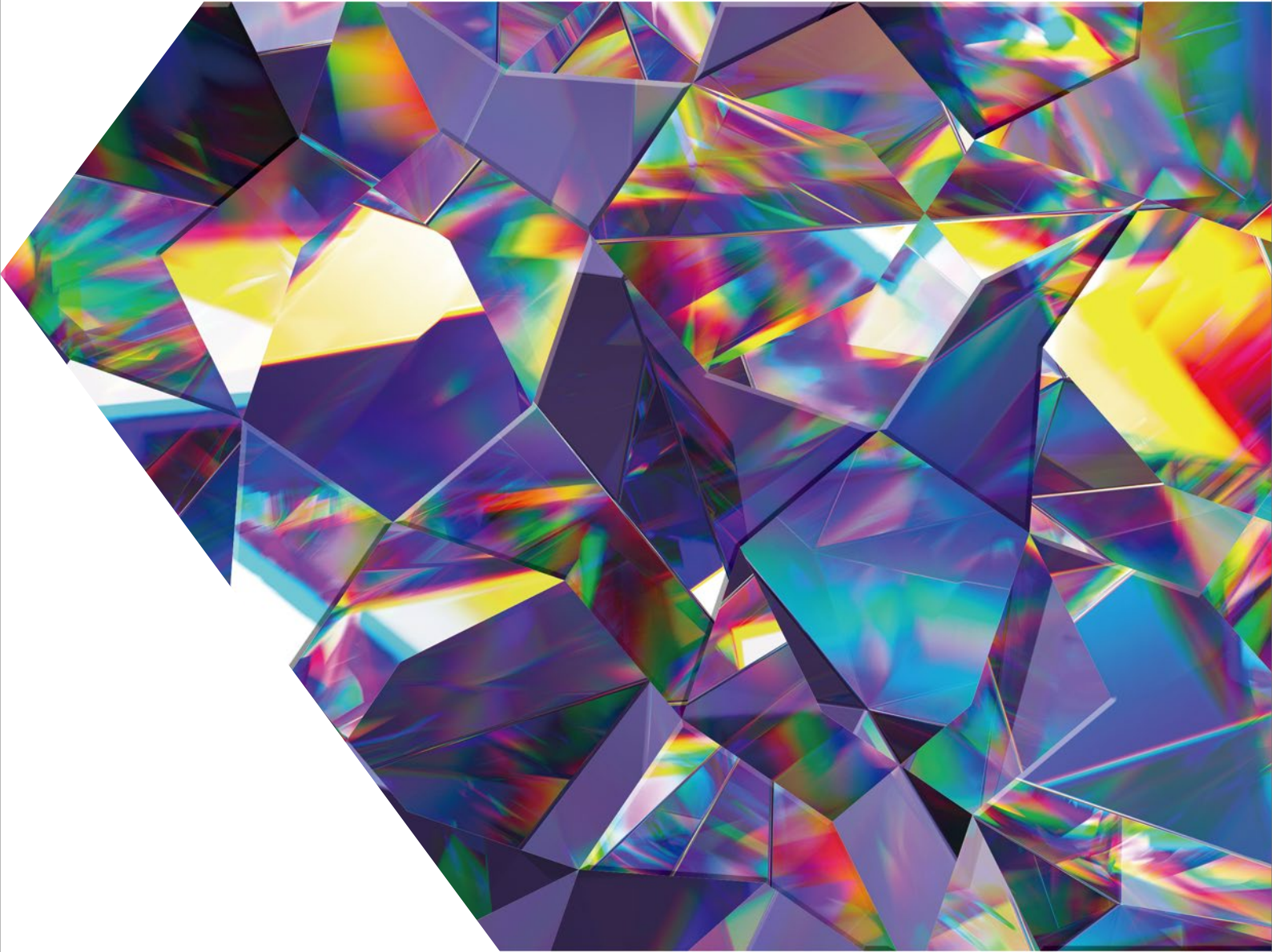




OSAKA SODA

# CAPCELL PAK

## ADME-HR / INERT ADME-HR



 OSAKA SODA CO., LTD.

A Cage-Structured C<sub>12</sub> column Achieving Strong Retention for Polar Analytes under Reversed-Phase Mode

*Best second choice*

# CAPCELL PAK ADME-HR CAPCELL PAK INERT ADME-HR

The introduction of Adamantylethyl groups provides a hydrophobic interaction while maintaining high surface polarity, resulting in retaining polar analytes even under water-rich mobile phases.

## Physical property values

### CAPCELL PAK ADME-HR

Particle Size (μm)	Pore Size (nm)	Surface Area (m <sup>2</sup> /g)	Ligand Density (μmol/m <sup>2</sup> )	C%	pH Range	Max. Pressure (MPa)
2	10	310	2.7	12	2~9	100
3	10	310	2.7	12	2~9	20
5	10	310	2.7	12	2~9	20

### CAPCELL PAK INERT ADME-HR

Particle Size (μm)	Pore Size (nm)	Surface Area (m <sup>2</sup> /g)	Ligand Density (μmol/m <sup>2</sup> )	C%	pH Range	Max. Pressure (MPa)
3	10	310	2.7	12	2~9	50

#### Structure of INERT Column



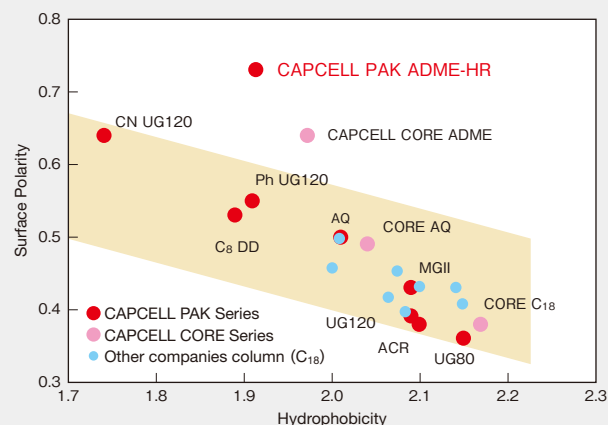
## What is ADME?

ADME is an abbreviation of **Adamantane**, which consists of ten carbons in a diamond-like structure. Ethyl groups are introduced to the **Adamantane** as a spacer and employed as a unique bonded phase for the CAPCELL PAK ADME-HR columns.



Adamantylethyl Groups (ADME Groups)

## Parameter Map

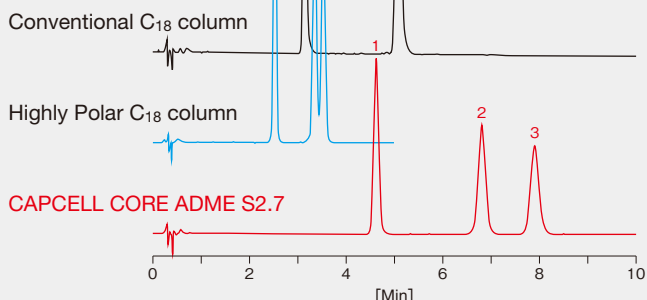
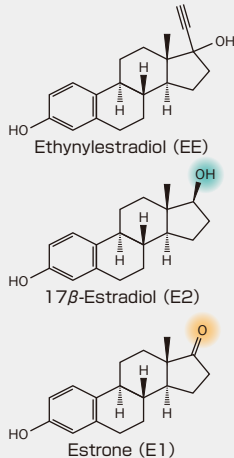


A Truly Unprecedented Balance of Hydrophobicity and Surface Polarity

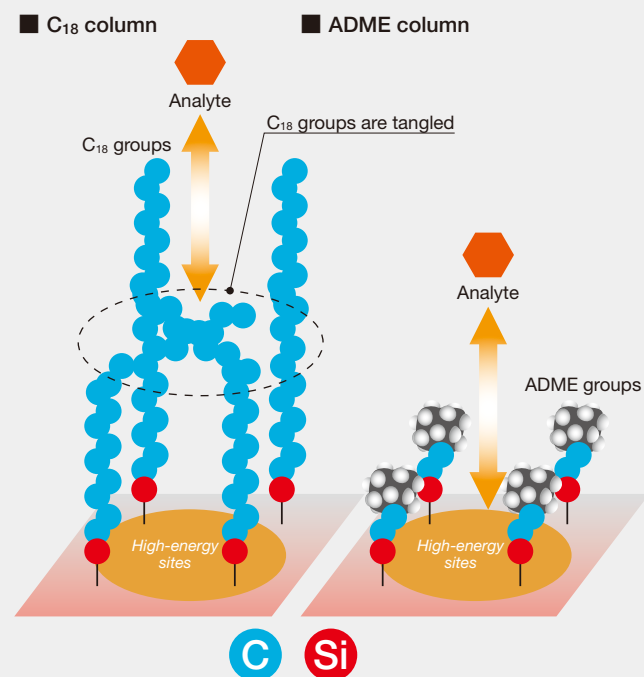
## Comparison of Stereoselectivity

### HPLC Conditions

Column size : 2.1 mm i.d. x 50 mm  
 Mobile phase: H<sub>2</sub>O / CH<sub>3</sub>CN = 70 / 30  
 Flow rate : 0.4 mL/min  
 Temperature : 40 °C  
 Detection : PDA 220 nm  
 Inj. vol. : 3 μL (50 μg/mL each)  
 Sample : 1. 17β-Estradiol (E2)  
 2. Estrone (E1)  
 3. Ethynylestradiol (EE)



## Comparison of Surface Polarity between a C<sub>18</sub> and ADME column



The caged-structured ADME groups offer interaction with the surface of the silica, resulting in providing a unique selectivity compared to a conventional C<sub>18</sub> column.

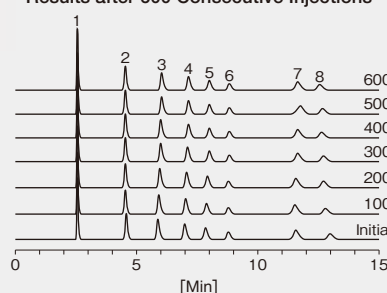
## Highly Stable under 100 % Water Mobile Phases

As shown on the right, the efficiency is very stable even after 600 injections under acidic mobile phase.

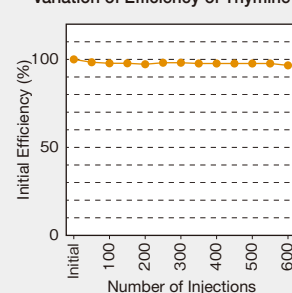
### HPLC Conditions

Column size : 2.1 mm i.d. x 150 mm  
 Mobile phase: 10 mmol/L HCOONH<sub>4</sub> (Adjusted with formic acid at pH 3)  
 Flow rate : 0.2 mL/min  
 Temperature: 40 °C  
 Detection : UV 254 nm  
 Inj. vol. : 1 µL  
 Sample : 1. Cytosine 2. Uracil 3. Guanine 4. Hypoxanthine  
 5. Xanthine 6. Oxipurinol 7. Allopurinol 8. Thymine

### Results after 600 Consecutive Injections



### Variation of Efficiency of Thymine



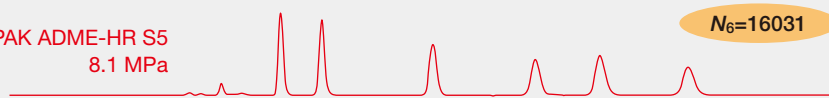
## Retention Behavior of Biogenic Amines under 100 % Water Mobile Phase

As shown below, CAPCELL PAK ADME-HR offers stronger retention of polar analytes, resulting in delivering complete separation for all analytes.

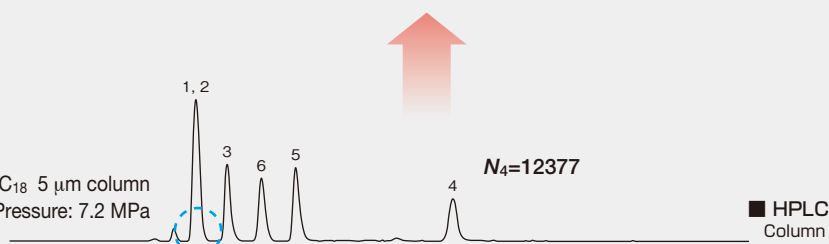
CAPCELL PAK ADME-HR S3  
13.6 MPa



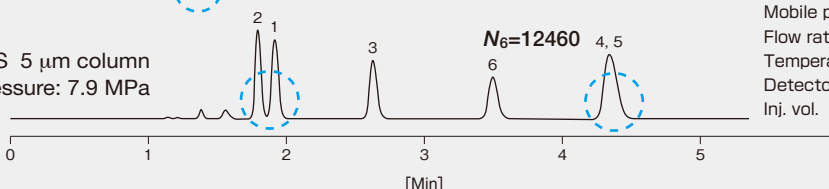
CAPCELL PAK ADME-HR S5  
8.1 MPa



Highly Polar C<sub>18</sub> 5 µm column  
Pressure: 7.2 MPa



Hybrid ODS 5 µm column  
Pressure: 7.9 MPa



$N_6=20967$

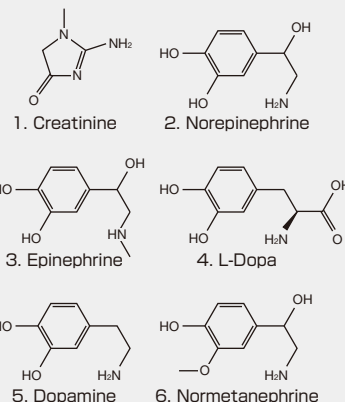
$N_6=16031$

$N_4=12377$

$N_6=12460$

### HPLC Conditions

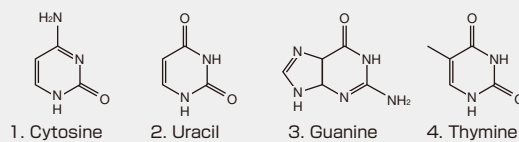
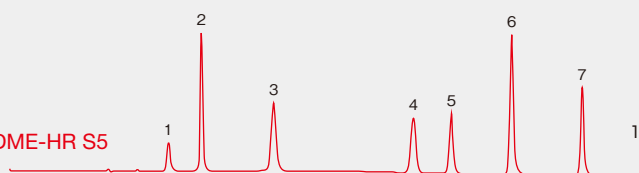
Column size : 4.6 mm i.d. x 150 mm  
 Mobile phase: 0.1 vol% HCOOH  
 Flow rate : 1.0 mL/min  
 Temperature : 40 °C  
 Detector : NQAD (Evaporation 60 °C, Nebulizer 30 °C)  
 Inj. vol. : 3 µL



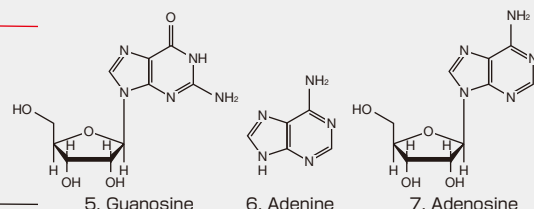
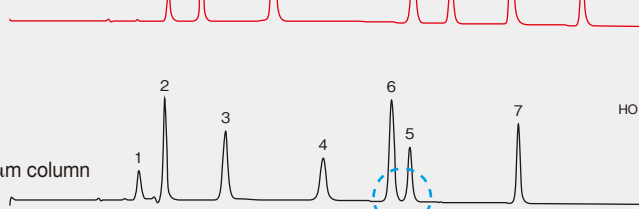
## Analysis of Nucleic-Acid Bases and Nucleosides via Gradient Elution

As shown below, the unique selectivity provided from CAPCELL PAK ADME-HR shows complete separation for all analytes, but with stronger retention of polar analytes.

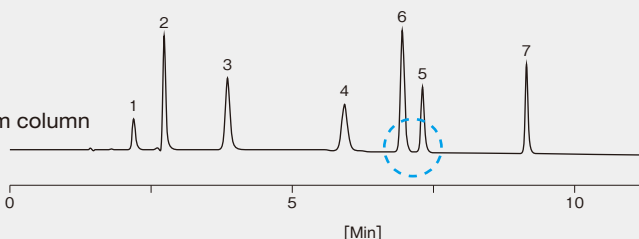
CAPCELL PAK ADME-HR S5



Highly Polar C<sub>18</sub> 5 µm column



Hybrid ODS 5 µm column



### HPLC Conditions

Column size : 2.0 or 2.1 mm i.d. x 150 mm  
 Mobile phase: A) 10 mmol/L HCOONH<sub>4</sub>, H<sub>2</sub>O  
 B) CH<sub>3</sub>CN  
 B 1 % (0 min) -> 1 % (1 min) ->  
 40 % (15 min) -> 1 % (15.1 min) Gradient  
 Flow rate : 0.2 mL/min  
 Temperature : 40 °C  
 Detection : UV 254 nm  
 Inj. vol. : 2 µL

## Ordering Information

### CAPCELL PAK ADME-HR

P/N	Description	Particle Size (μm)	I.D. (mm)	Length (mm)	P/N	Description	Particle Size (μm)	I.D. (mm)	Length (mm)
93300	ADME-HR	2	2.1	20	93350	ADME-HR	5	2.1	20
93301	ADME-HR	2	2.1	50	93351	ADME-HR	5	2.1	35
93302	ADME-HR	2	2.1	100	93352	ADME-HR	5	2.1	50
93303	ADME-HR	2	2.1	150	93353	ADME-HR	5	2.1	75
93310	ADME-HR(1/32)	3	0.3	100	93354	ADME-HR	5	2.1	100
93311	ADME-HR(1/32)	3	0.3	150	93355	ADME-HR	5	2.1	150
93312	ADME-HR	3	1.0	100	93356	ADME-HR	5	2.1	250
93320	ADME-HR	3	2.1	20	93360	ADME-HR	5	3.0	150
93321	ADME-HR	3	2.1	35	93361	ADME-HR	5	3.0	250
93322	ADME-HR	3	2.1	50	93370	ADME-HR	5	4.6	35
93323	ADME-HR	3	2.1	75	93371	ADME-HR	5	4.6	50
93324	ADME-HR	3	2.1	100	93372	ADME-HR	5	4.6	75
93325	ADME-HR	3	2.1	150	93373	ADME-HR	5	4.6	100
93326	ADME-HR	3	2.1	250	93374	ADME-HR	5	4.6	150
93330	ADME-HR	3	3.0	50	93375	ADME-HR	5	4.6	250
93331	ADME-HR	3	3.0	100	93380	ADME-HR	5	10	35
93332	ADME-HR	3	3.0	150	93381	ADME-HR	5	10	150
93340	ADME-HR	3	4.6	35	93382	ADME-HR	5	10	250
93341	ADME-HR	3	4.6	50	93390	ADME-HR	5	20	35
93342	ADME-HR	3	4.6	75	93391	ADME-HR	5	20	50
93343	ADME-HR	3	4.6	100	93392	ADME-HR	5	20	100
93344	ADME-HR	3	4.6	150	93393	ADME-HR	5	20	150
93345	ADME-HR	3	4.6	250	93394	ADME-HR	5	20	250
12600	ADME-HR CARTRIDGE (2PCS)	3	2.0	10	12610	ADME-HR CARTRIDGE (2PCS)	5	2.0	10
12601	ADME-HR CARTRIDGE (2PCS)	3	4.0	10	12611	ADME-HR CARTRIDGE (2PCS)	5	4.0	10
12415	CARTRIDGE HOLDER 10 (L)	-	-	10	12415	CARTRIDGE HOLDER 10 (L)	-	-	10

### CAPCELL PAK INERT ADME-HR

P/N	Description	Particle Size (μm)	I.D. (mm)	Length (mm)
95001	ADME-HR	3	2.0	50
95002	ADME-HR	3	2.0	100
95003	ADME-HR	3	2.0	150

## CONTACT US :

**OSAKA SODA CO., LTD.**

**DAISO Fine Chem USA, Inc.**

**DAISO Fine Chem GmbH**

1-12-18 Awaza, Nishi-ku, Osaka 550-0011, Japan  
 TEL: +81-(0)6-6110-1598, FAX: +81-(0)6-6110-1612  
 E-mail: silica@osaka-soda.co.jp

3858 Carson Street, Suite 126, Torrance, CA 90503, USA  
 TEL: +1-310-540-5312, FAX: +1-310-540-5332  
 E-mail: daiso\_us@osaka-soda.co.jp

Immermannstrasse 13, 40210, Düsseldorf, Germany  
 TEL: +49-(0)211-83025168, FAX: +49-(0)211-83025213  
 E-mail: gmbh@osaka-soda.co.jp

© Copyright OSAKA SODA CO., LTD. March 2006. All rights reserved.  
 No part of this catalog may be copied or reprinted, for commercial purposes, without prior written permission from OSAKA SODA CO., LTD.