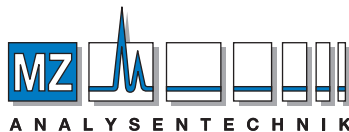
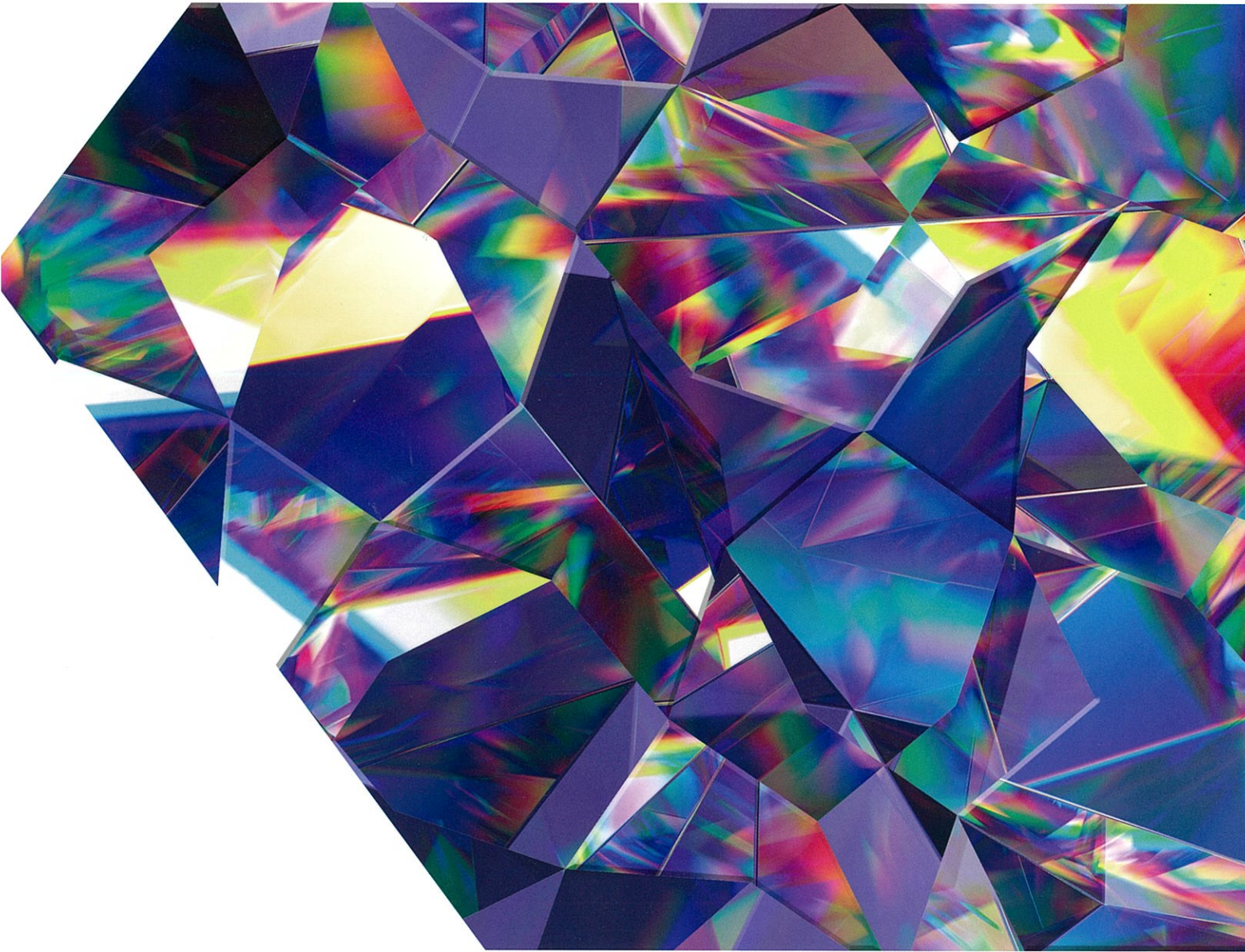




OSAKA SODA

# CAPCELL PAK

## ADME-HR / INERT ADME-HR



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 **OSAKA SODA CO., LTD.**



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

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

*Best second choice*

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



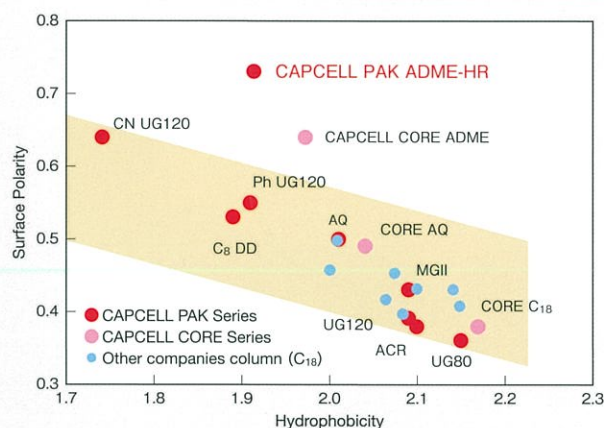
## What is ADME?

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

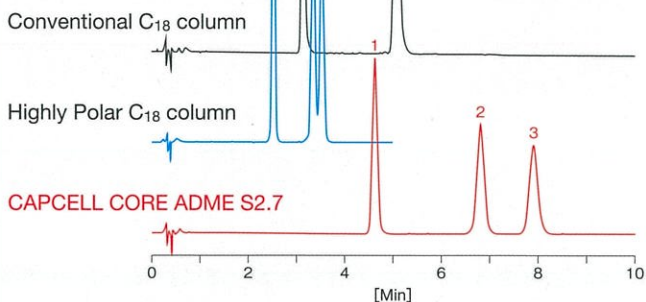
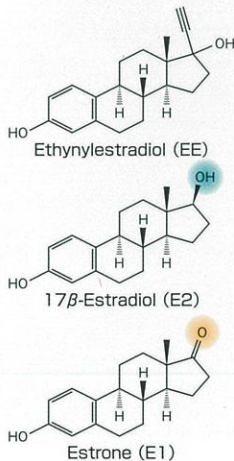


A Truly Unprecedented Balance of Hydrophobicity and Surface Polarity

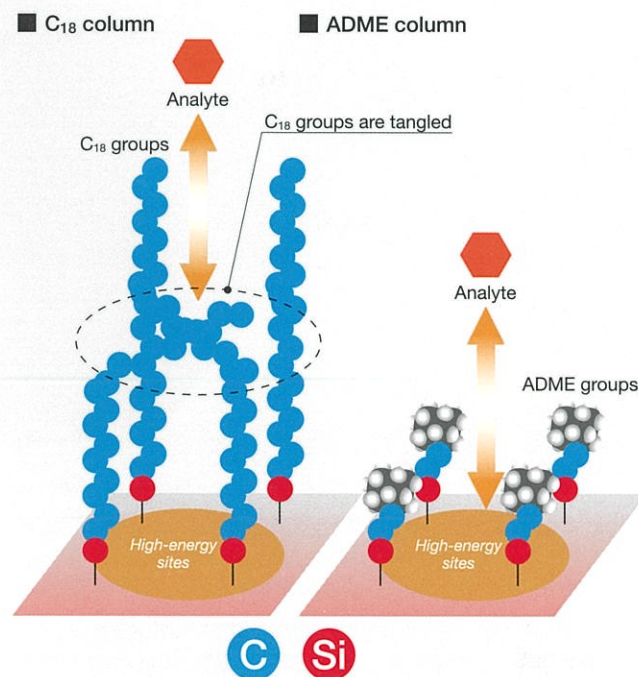
## Comparison of Stereoselectivity

### 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)

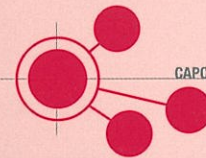


## Comparison of Surface Polarity between a C<sub>18</sub> and ADME column



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.





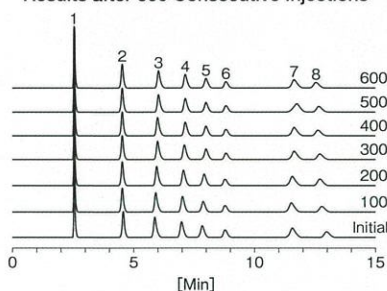
## Highly Stable under 100 % Water Mobile Phases

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

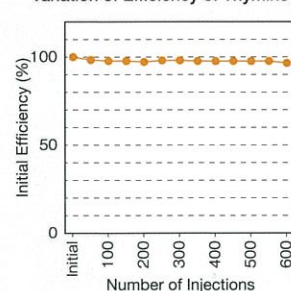
### HPLC Conditions

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



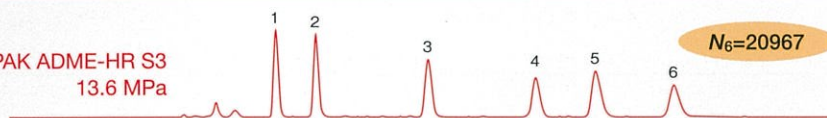
### Variation of Efficiency of Thymine



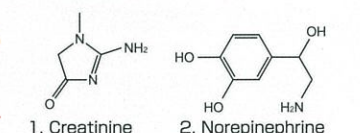
## Retention Behavior of Biogenic Amines under 100 % Water Mobile Phase

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

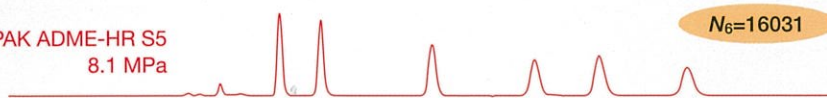
CAPCELL PAK ADME-HR S3  
13.6 MPa



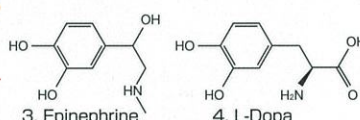
$N_6=20967$



CAPCELL PAK ADME-HR S5  
8.1 MPa



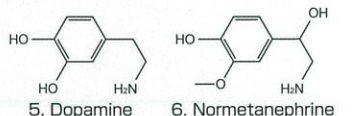
$N_6=16031$



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



$N_4=12377$



Hybrid ODS 5 µm column  
Pressure: 7.9 MPa



$N_6=12460$

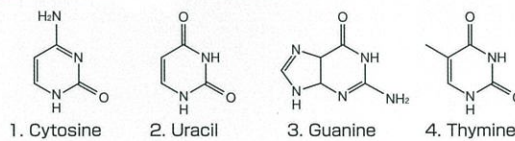
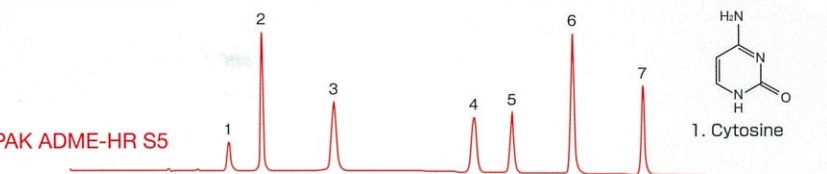
### HPLC Conditions

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

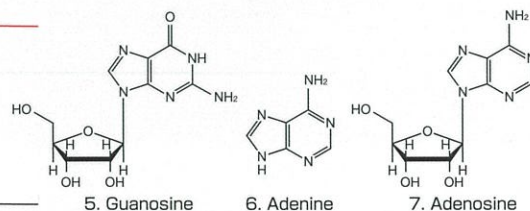
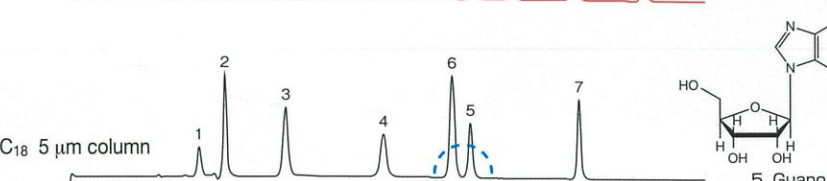
## Analysis of Nucleic-Acid Bases and Nucleosides via Gradient Elution

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.

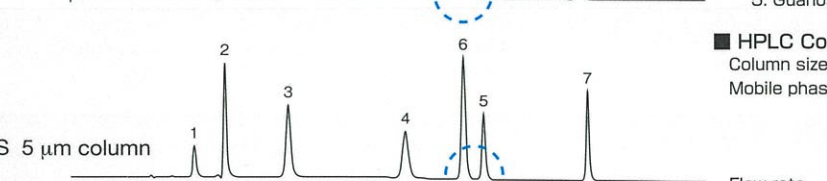
CAPCELL PAK ADME-HR S5



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

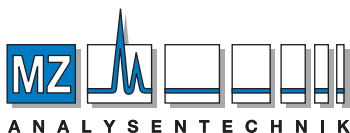
P/N	Description	Particle Size (μm)	I.D. (mm)	Length (mm)	List Price (JPY)
93300	ADME-HR	2	2.1	20	72,000
93301	ADME-HR	2	2.1	50	72,000
93302	ADME-HR	2	2.1	100	83,000
93310	ADME-HR(1/32)	3	0.3	100	110,000
93311	ADME-HR(1/32)	3	0.3	150	120,000
93312	ADME-HR	3	1.0	100	76,000
93320	ADME-HR	3	2.1	20	59,000
93321	ADME-HR	3	2.1	35	54,000
93322	ADME-HR	3	2.1	50	56,000
93323	ADME-HR	3	2.1	75	61,000
93324	ADME-HR	3	2.1	100	65,000
93325	ADME-HR	3	2.1	150	72,000
93326	ADME-HR	3	2.1	250	88,000
93330	ADME-HR	3	3.0	50	54,000
93331	ADME-HR	3	3.0	100	63,000
93332	ADME-HR	3	3.0	150	77,000
93340	ADME-HR	3	4.6	35	47,000
93341	ADME-HR	3	4.6	50	52,000
93342	ADME-HR	3	4.6	75	56,000
93343	ADME-HR	3	4.6	100	60,000
93344	ADME-HR	3	4.6	150	69,000
93345	ADME-HR	3	4.6	250	83,000
12600	ADME-HR CARTRIDGE (2PCS)	3	2.0	10	30,000
12601	ADME-HR CARTRIDGE (2PCS)	3	4.0	10	30,000
12415	CARTRIDGE HOLDER 10 (L)	-	-	10	20,000

P/N	Description	Particle Size (μm)	I.D. (mm)	Length (mm)	List Price (JPY)
93350	ADME-HR	5	2.1	20	59,000
93351	ADME-HR	5	2.1	35	54,000
93352	ADME-HR	5	2.1	50	56,000
93353	ADME-HR	5	2.1	75	61,000
93354	ADME-HR	5	2.1	100	65,000
93355	ADME-HR	5	2.1	150	72,000
93356	ADME-HR	5	2.1	250	88,000
93360	ADME-HR	5	3.0	150	77,000
93361	ADME-HR	5	3.0	250	99,000
93370	ADME-HR	5	4.6	35	47,000
93371	ADME-HR	5	4.6	50	52,000
93372	ADME-HR	5	4.6	75	56,000
93373	ADME-HR	5	4.6	100	60,000
93374	ADME-HR	5	4.6	150	69,000
93375	ADME-HR	5	4.6	250	83,000
93380	ADME-HR	5	10	35	100,000
93381	ADME-HR	5	10	150	210,000
93382	ADME-HR	5	10	250	270,000
93390	ADME-HR	5	20	35	170,000
93391	ADME-HR	5	20	50	240,000
93392	ADME-HR	5	20	100	340,000
93393	ADME-HR	5	20	150	450,000
93394	ADME-HR	5	20	250	750,000
12610	ADME-HR CARTRIDGE (2PCS)	5	2.0	10	30,000
12611	ADME-HR CARTRIDGE (2PCS)	5	4.0	10	30,000
12415	CARTRIDGE HOLDER 10 (L)	-	-	10	20,000

### CAPCELL PAK INERT ADME-HR

P/N	Description	Particle Size (μm)	I.D. (mm)	Length (mm)	List Price (JPY)
95001	ADME-HR	3	2.0	50	74,000
95002	ADME-HR	3	2.0	100	83,000
95003	ADME-HR	3	2.0	150	90,000

## CONTACT US :



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