

# Meteoric Core

## UHPLC & HPLC Columns

Core-Shell Columns with Outstanding Resolution

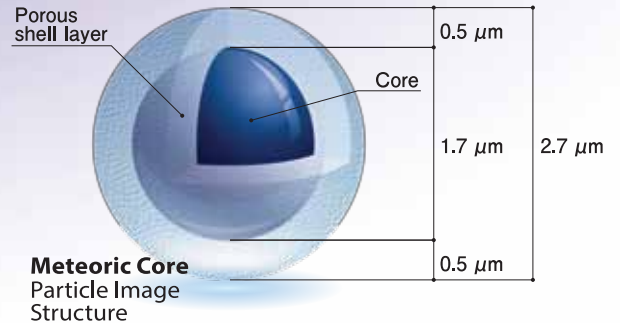
- Ultra Fast Analysis and Excellent Resolution
- Excellent Peak Shape on Basic and Coordination Compounds



## Core-Shell Columns with Outstanding Resolution for UHPLC & HPLC

# Meteoric Core

- Outstanding resolution for UHPLC and HPLC.
- Ideal for ultra fast and high resolution analysis.
- Low column bleed; ideal for LC/MS.
- Wide usable pH range.
- Excellent peak shape with basic and coordination compounds.
- Reduces backpressure in half compared to sub-2 micron columns with no loss of resolution.

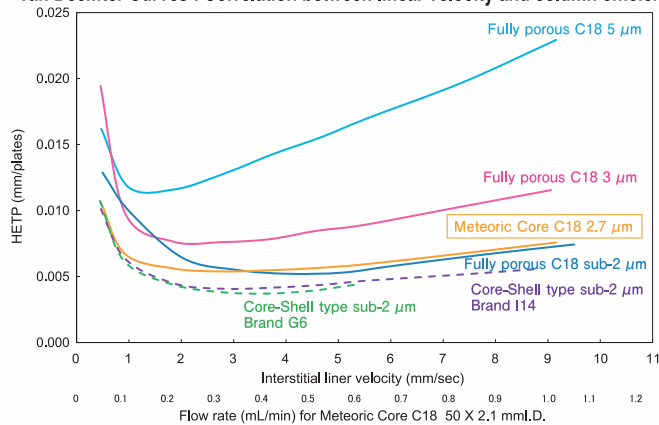


### Specifications

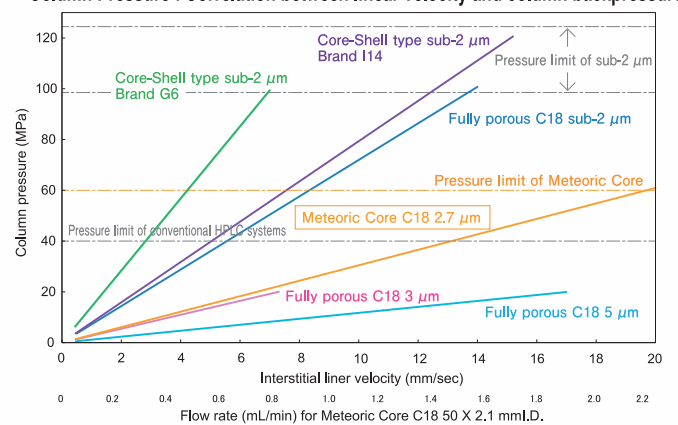
Name	Meteoric Core C18	Meteoric Core C18 BIO	Meteoric Core C8
Base particle	Core-Shell type silica gel		
Particle size (μm)	2.7		
Pore size (nm)	8	16	8
Specific surface area (m <sup>2</sup> /g)	150	90	150
Bonding	Trifunctional		
Carbon content (%)	7	5	5
Endcapping	Yes		
pH range	1.5-10	1.5-10	1.5-9
USP classification	L1	L1	L7

### Advantages of Core-Shell Column Packing Material

Van Deemter Curves : Correlation between linear velocity and column efficiency



Column Pressure : Correlation between linear velocity and column backpressure

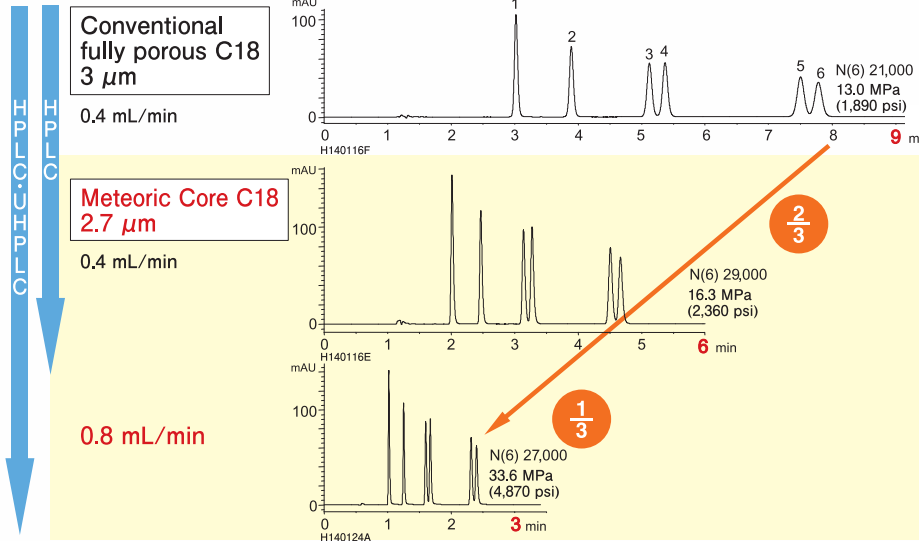


- Meteoric Core C18 has high column efficiency approaching that of sub-2 micron columns over a wide range of flow rates.
- The operating pressure of Meteoric Core is one half to one fifth of sub-2 micron columns.
- High throughput analysis can be expected, even with longer length columns.

Column : 50 X 2.0 or 2.1 mmID.  
 Eluent : acetonitrile/water (60/40)  
 Temperature : 25 °C  
 Sample : butyl benzoate

# Ultrafast Analysis and Excellent Resolution

## Ultrafast separation of Parabens: Typically difficult-to-separate geometric isomers

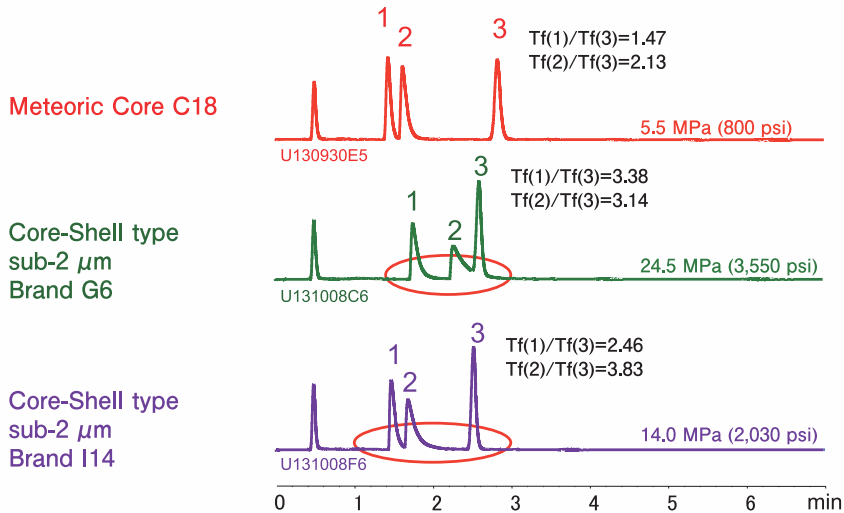


1. Methyl *p*-hydroxybenzoate
2. Ethyl *p*-hydroxybenzoate
3. Isopropyl *p*-hydroxybenzoate
4. Propyl *p*-hydroxybenzoate
5. Isobutyl *p*-hydroxybenzoate
6. Butyl *p*-hydroxybenzoate

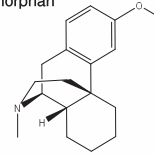
Column : 150 X 3.0 mm I.D.  
Eluent : acetonitrile/water (50/50)  
Temperature : 30 °C  
Detection : UV at 270 nm

Meteoric Core C18 can shorten analysis time by two thirds, compared to a conventional fully porous C18 column, while increasing theoretical plate number.

## Excellent Peak Shape on Basic Compounds



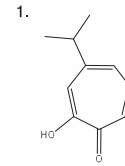
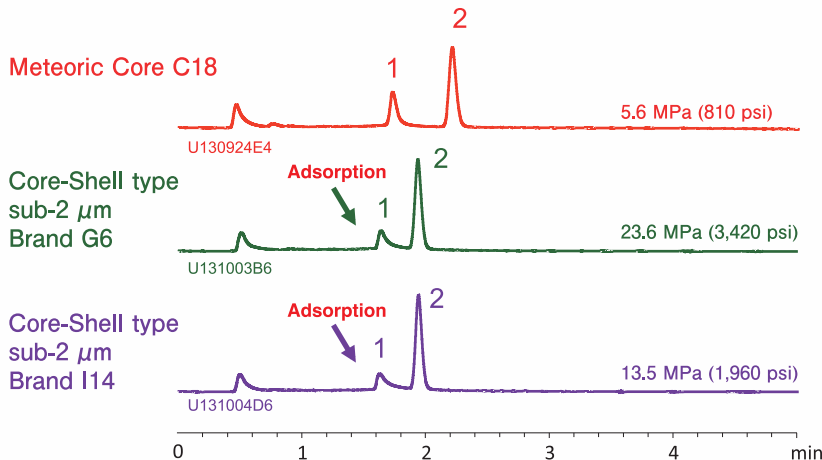
Dextromethorphan (Peak 2)



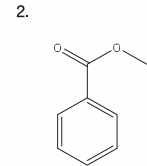
Column : 50 X 2.1 mm I.D.  
Eluent : 20 mM KH<sub>2</sub>PO<sub>4</sub>-K<sub>2</sub>HPO<sub>4</sub> (pH 6.9)/acetonitrile (65/35)  
Flow rate : 0.2 mL/min  
Temperature : 40°C  
Detection : UV at 235 nm  
Sample : 1. Chlorpheniramine  
2. Dextromethorphan  
3. Propyl *p*-hydroxybenzoate (I.S.)

Meteoric Core C18 column is a high resolution column which provides excellent peak shapes for basic compounds (Peak 1 and 2) compared to sub-2 μm Core-Shell columns. Chromatographers can expect ultrafast analysis of basic compounds with highly quantitative and sensitive analysis by using Meteoric Core C18.

## Excellent Peak Shape on Coordination Compounds



Hinokitiol



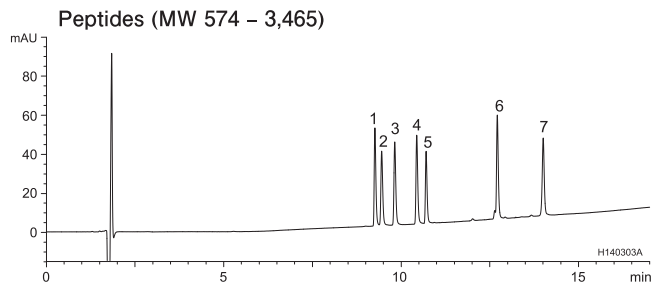
Methyl benzoate (I.S.)

Column : 50 X 2.1 mm I.D.  
Eluent : acetonitrile/0.1% phosphoric acid (40/60)  
Flow rate : 0.2 mL/min  
Temperature : 40°C  
Detection : UV at 254 nm

Meteoric Core C18 is able to provide excellent peak shapes for coordination compounds which are often adsorbed onto a column, resulting from a strong interaction with impurities such as trace amount of metal ion. Meteoric Core is suitable for a quantitative analysis of coordination compounds.

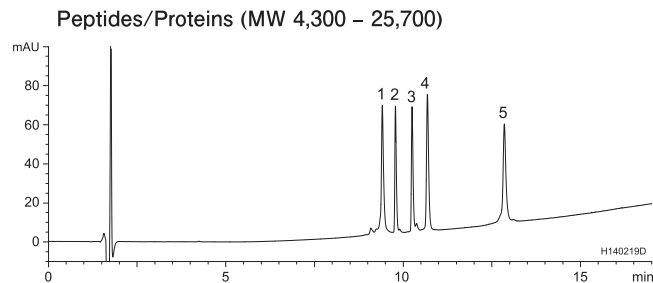
# Peptide/Protein Separation

**Meteoric Core C18 BIO with wider pore size: Appropriate for separation of peptides/proteins with molecular weight up to 30,000.**



- |   |                                   |
|---|-----------------------------------|
| 1. BAM-12P (MW 1,425)   | 5. $\alpha$ -Endorphin (MW 1,746) |
| 2. [D-Ala <sup>2</sup> ,Met <sup>5</sup> ]-Enkephalinamide (MW 587) | 6. $\gamma$ -Endorphin (MW 1,859) |
| 3. Met-Enkephalin (MW 574)  | 7. $\beta$ -Endorphin (MW 3,465)  |
| 4. [D-Ala <sup>2</sup> ,Met <sup>5</sup> ]-Enkephalin (MW 588)      |                                   |

Column : Meteoric Core C18 BIO 2.7  $\mu$ m  
150 X 2.1 mmI.D.  
Eluent : A) water/TFA (100/0.1)  
B) acetonitrile/TFA (100/0.1)  
15-55%B (0-15 min), 55%B (15-17 min)  
Flow rate : 0.2 mL/min  
Temperature : 40 °C  
Detection : UV at 220 nm  
Pressure : 14.9-16.1 MPa (2,160-2,330 psi)



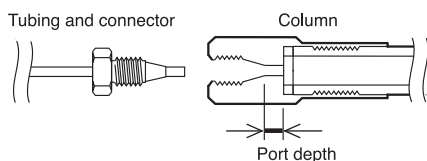
- |  |   |
|--|---|
| 1. Cytochrome c (MW 12,400)            | 4. Lysozyme (MW 14,000)                     |
| 2. Insulin (bovine) (MW 5,700)         | 5. $\alpha$ -Chymotrypsinogen A (MW 25,700) |
| 3. Amyloid $\beta$ -protein (MW 4,300) |   |

Column : Meteoric Core C18 BIO 2.7  $\mu$ m  
150 X 2.1 mmI.D.  
Eluent : A) water/TFA (100/0.1)  
B) acetonitrile/TFA (100/0.1)  
20-70%B (0-15 min), 70%B (15-17 min)  
Flow rate : 0.2 mL/min  
Temperature : 40 °C  
Detection : UV at 220 nm  
Pressure : 12.8-16.1 MPa (1,860-2,330 psi)

## Ordering Information

Particle size ( $\mu$ m)	Column size inner diameter X length (mm)	Product number		
		Meteoric Core C18	Meteoric Core C18 BIO	Meteoric Core C8
2.7	2.1 X 30	CAS08SQ7-03Q1PT	CAW16SQ7-03Q1PT	COS08SQ7-03Q1PT
	2.1 X 50	CAS08SQ7-05Q1PT	CAW16SQ7-05Q1PT	COS08SQ7-05Q1PT
	2.1 X 75	CAS08SQ7-L5Q1PT	CAW16SQ7-L5Q1PT	COS08SQ7-L5Q1PT
	2.1 X 100	CAS08SQ7-10Q1PT	CAW16SQ7-10Q1PT	COS08SQ7-10Q1PT
	2.1 X 150	CAS08SQ7-15Q1PT	CAW16SQ7-15Q1PT	COS08SQ7-15Q1PT
	3.0 X 30	CAS08SQ7-0303PT	CAW16SQ7-0303PT	COS08SQ7-0303PT
	3.0 X 50	CAS08SQ7-0503PT	CAW16SQ7-0503PT	COS08SQ7-0503PT
	3.0 X 75	CAS08SQ7-L503PT	CAW16SQ7-L503PT	COS08SQ7-L503PT
	3.0 X 100	CAS08SQ7-1003PT	CAW16SQ7-1003PT	COS08SQ7-1003PT
	3.0 X 150	CAS08SQ7-1503PT	CAW16SQ7-1503PT	COS08SQ7-1503PT
	4.6 X 30	CAS08SQ7-0346PT	CAW16SQ7-0346PT	COS08SQ7-0346PT
	4.6 X 50	CAS08SQ7-0546PT	CAW16SQ7-0546PT	COS08SQ7-0546PT
	4.6 X 75	CAS08SQ7-L546PT	CAW16SQ7-L546PT	COS08SQ7-L546PT
	4.6 X 100	CAS08SQ7-1046PT	CAW16SQ7-1046PT	COS08SQ7-1046PT
	4.6 X 150	CAS08SQ7-1546PT	CAW16SQ7-1546PT	COS08SQ7-1546PT

### Consideration of connector and column endfitting



The end of the product number	Port depth	Style of endfitting
PT	2 mm	UPLC compatible (Parker) style

UPLC is a registered trademark of Waters Corporation.

## Worldwide Availability

YMC Co., Ltd.  
www.ymc.co.jp

YMC Europe GmbH  
www.ymc-europe.com

YMC India Pvt.Ltd.  
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### YMC America, Inc.

941 Marcon Boulevard, Suite 201  
Allentown, PA 18109  
Phone: 610-266-8650  
Fax: 610-266-8652  
Email: info@ymcamerica.com  
Website: www.ymcamerica.com  
Buy Online: store.ymcamerica.com

Distributor