

HPLC COLUMN



30th Anniversary

Diamonsil[®] Plus C30
HPLC Columns

Diamonsil® Plus C30 columns are based on high-purity silica and advanced bonding and end-capping technologies, enabling rapid and high-resolution separations of hydrophobic, long-chain lipid compounds and isomers. The C30 stationary phase provides unique selectivity for positional or geometric isomeric compounds and is compatible with 100% aqueous mobile phases. It is particularly well-suited for the separation and analysis of fat-soluble vitamins (A, D, E) and carotenoids (such as lutein, carotenes, and lycopene, etc.). Dikma's proprietary bonding techniques and column packing procedures ensure excellent reproducibility and longer column lifetime.

Diamonsil® C30 Columns

- ◆ Excellent selectivity for hydrophobic compounds, lipids, long carbon chains, positional or geometric isomers
- ◆ Compatible with 100% aqueous mobile phases, preventing phase collapse even in pure water-based mobile phases
- ◆ High-purity silica and high surface coverage minimize secondary interactions and peak tailing, resulting in excellent peak shape
- ◆ Superior durability and batch-to-batch reproducibility

Material Characteristics

Bonded Phase	Particle Size (μm)	Pore Size (Å)	Surface Area (m ² /g)	Purity (%)	Phase Density (μmol/m ²)	Carbon Loading (%)	pH Range	Endcapping
C30	3, 5, 10	100	200	> 99.999	2.6	16	1.5-8.5	Yes

Vitamin E

Vitamin E, also known as tocopherol, is one of the most important antioxidants. There are four natural forms (tocopherol) of vitamin E, which are α-tocopherol, β-tocopherol, γ-tocopherol, and δ-tocopherol, distinguished by the position of methyl groups. This application follows the national standard method GB 5009.82-2016, "National Food Safety Standard - Determination of Vitamins A, D, and E in Food", using methanol and water as the mobile phase, under gradient elution conditions, it achieves excellent separation of the four isomers of vitamin E.

Column: Listed on chromatograms

Dimension: 250×4.6 mm

Mobile Phase: A: H₂O B: MeOH

Gradient:	Time(min)	A%	B%
	0	4	96
	13.0	4	96
	20.0	0	100
	24.0	0	100
	24.5	4	96
	30.0	4	96

Flow Rate: 0.8 mL/min

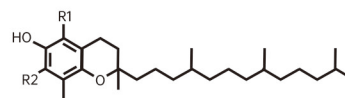
Temperature: Ambient

Detection: UV 294 nm

Sample:

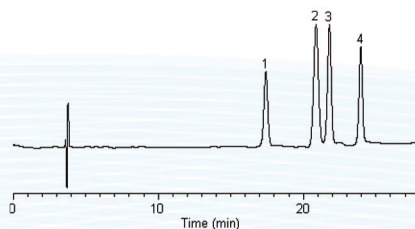
1. δ-Tocopherol
2. γ-Tocopherol
3. β-Tocopherol
4. α-Tocopherol

Four Isomeric Structures of Vitamin E

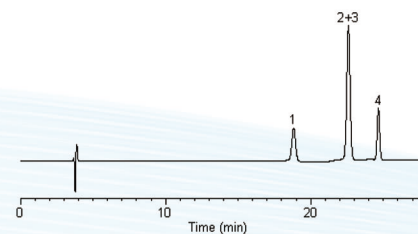


Tocopherol	R1	R2
Alpha (α)	CH ₃	CH ₃
Beta (β)	CH ₃	H
Gamma (γ)	H	CH ₃
Delta (δ)	H	H

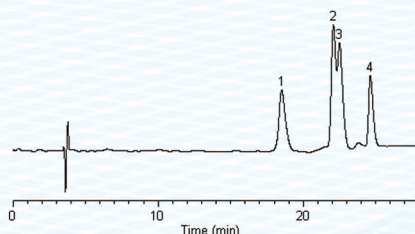
Diamonsil® Plus 5 μm C30



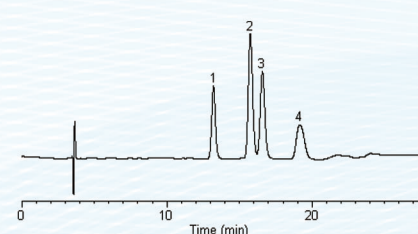
Diamonsil® Plus 5 μm C18



Thermo Acclaim 5 μm C30



YMC 5 μm Carotenoid



Vitamin A and D

This application follows the national standard method GB 5009.82-2016 "National Food Safety Standard - Determination of Vitamins A, D, and E in Food", using methanol and water as the mobile phase, under gradient elution conditions, it achieves excellent separation of vitamins A, D2, and D3.

Column: Listed on chromatograms

Dimension: 250×4.6 mm

Mobile Phase: A: H₂O B: MeOH

Gradient:	Time(min)	A%	B%
	0	4	96
	13.0	4	96
	20.0	0	100
	24.0	0	100
	24.5	4	96
	30.0	4	96

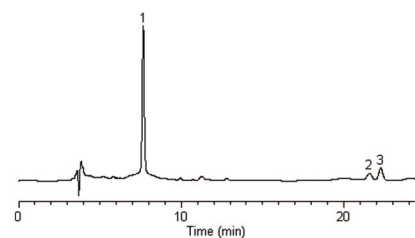
Flow Rate: 0.8 mL/min

Temperature: Ambient

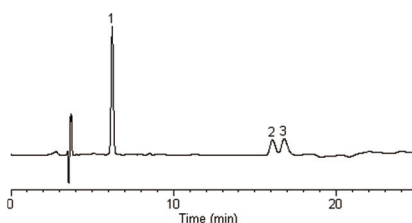
Detection: UV 325 nm

Sample:
1. Vitamin A
2. Vitamin D2
3. Vitamin D3

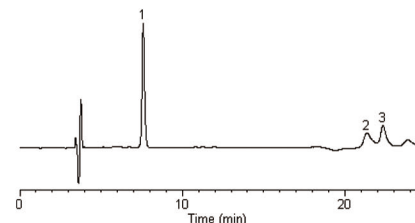
Diamonsil® Plus 5 μm C30



YMC 5 μm Carotenoid



Thermo Acclaim 5 μm C30



Crotamiton

Crotamiton is an *anti*-scabies medication primarily used to treat scabies and skin itching. This compound exists in two stereoisomers, *cis* and *trans*.

Column: Listed on chromatograms

Dimension: 250×4.6 mm

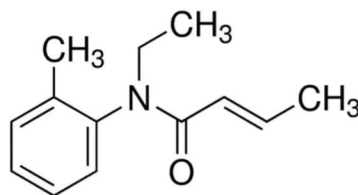
Mobile Phase: MeCN:H₂O = 40:60

Flow Rate: 1.0 mL/min

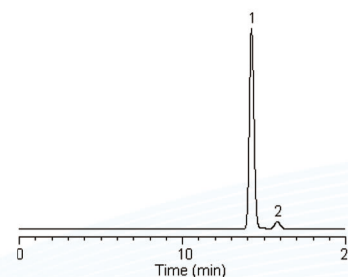
Temperature: 30 °C

Detection: UV 242 nm

Sample:
1. *trans*-Crotamiton
2. *cis*-Crotamiton



Diamonsil® Plus 5 μm C30



Organic Acids

Column: Listed on chromatograms

Dimension: 250×4.6 mm

Mobile Phase: 50 mM NH₄H₂PO₄, pH 2.4

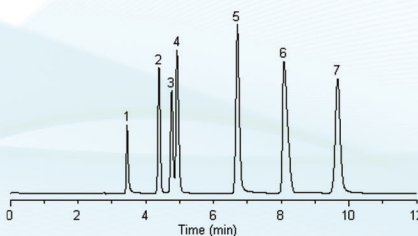
Flow Rate: 1.0 mL/min

Temperature: 30 °C

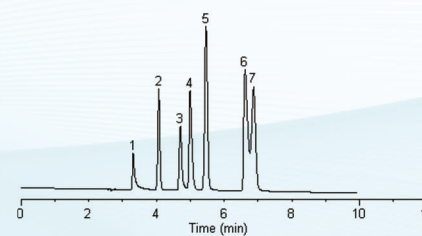
Detection: UV 210 nm

Sample:
1. Fomic acid
2. Malonic acid
3. Lactic acid
4. Acetic acid
5. Maleic acid
6. Citric acid
7. Fumaric acid

Diamonsil® Plus 5 μm C30



Diamonsil® Plus 5 μm C18



Lutein

This application follows the national standard method GB 5009.248-2016, "National Food Safety Standard - Determination of Lutein in Food". It uses a mobile phase consisting of methanol and water, under gradient elution conditions, this method achieves excellent separation of lutein stereoisomers, namely the *cis* and *trans* isomers of lutein.

Column: Listed on chromatograms

Dimension: 250×4.6 mm

Mobile Phase: A: MeOH:H₂O = 88:12 + 0.1% 2,6-Di-tert-butyl-4-methylphenol
B: Methyl tert-butyl ether + 0.1% 2,6-Di-tert-butyl-4-methylphenol

Gradient:	Time(min)	A%	B%
	0	100	0
	18.0	10	90
	18.1	100	0
	28.0	100	0

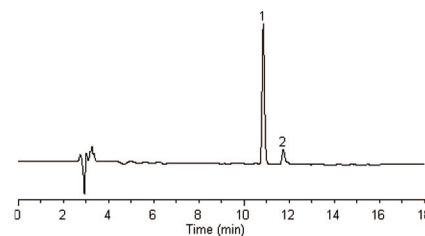
Flow Rate: 1.0 mL/min

Temperature: 30 °C

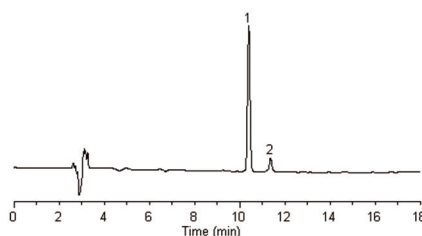
Detection: UV 445 nm

Sample: 1. *trans*-Lutein
2. *cis*-Lutein

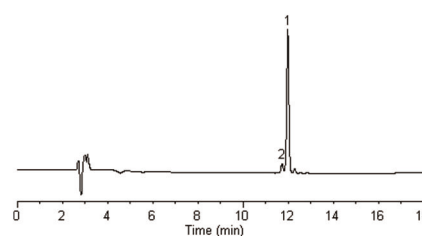
Diamonsil® Plus 5 μm C30



Thermo Acclaim 5 μm C30



YMC 5 μm Carotenoid



Separation of Carotenoid Isomers

Astaxanthin, lutein, and zeaxanthin are all carotenoids, with lutein and zeaxanthin being geometric isomers of each other. The only difference between them is the position of the double bond within the ring at one end.

Column: Listed on chromatograms

Dimension: 250×4.6 mm

Mobile Phase: MeCN:MeOH = 50:50 + 0.05% triethylamine

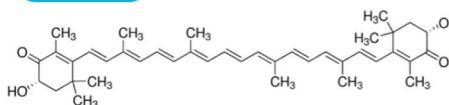
Flow Rate: 1.2 mL/min

Temperature: 30 °C

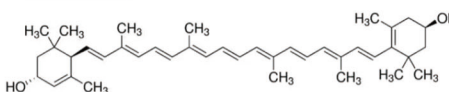
Detection: UV 480 nm

Sample: 1. Astaxanthin
2. Lutein
3. Zeaxanthin

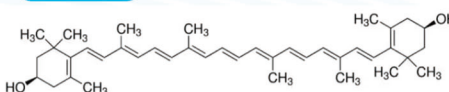
Astaxanthin



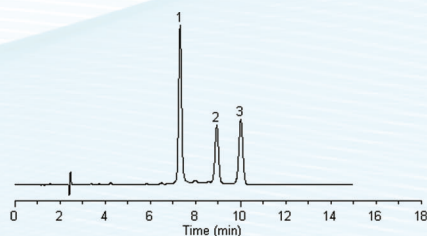
Lutein



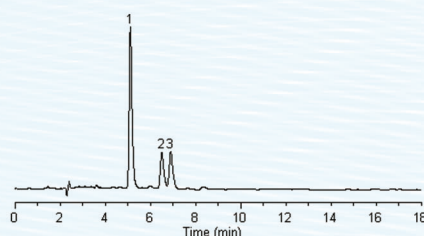
Zeaxanthin



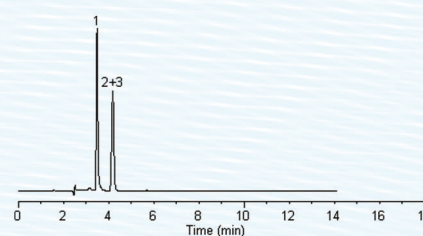
Diamonsil® Plus 5 μm C30



Thermo Acclaim 5 μm C30



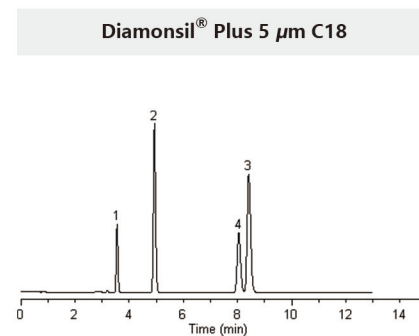
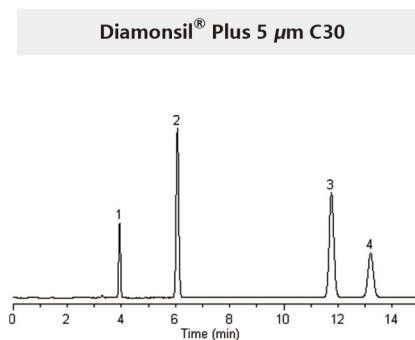
Diamonsil® Plus 5 μm C18



100% Aqueous Phase Compatible

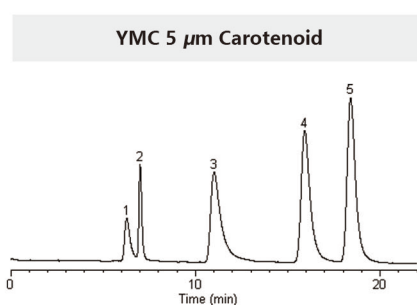
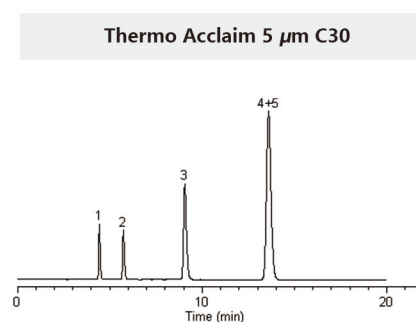
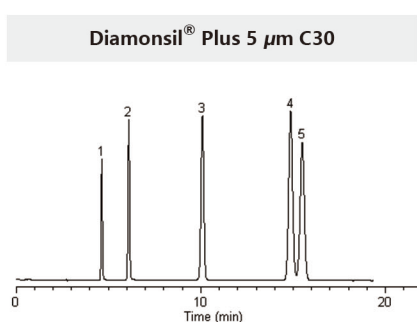
Catecholamine is a neurotransmitter that contains catechol and an amine group. Its chemical structure includes catechol (a benzene ring with two adjacent hydroxyl groups) and an amino-bearing side chain. These compounds are highly polar, under reverse-phase conditions require running in 100% aqueous phase to enhance their retention, which is a significant challenge for the tolerance of traditional C18 and other reverse-phase columns. Diamonsil® Plus C30 can handle pure aqueous phase analysis conditions with ease and provides unique selectivity compared to C18 columns.

Column:	Listed on chromatograms
Dimension:	250×4.6 mm
Mobile Phase:	100 mM KH ₂ PO ₄ , pH 2.6
Flow Rate:	1.0 mL/min
Temperature:	Ambient
Detection:	UV 210 nm
Sample:	1. Norepinephrine 2. Epinephrine 3. Dopamine 4. Levodopa



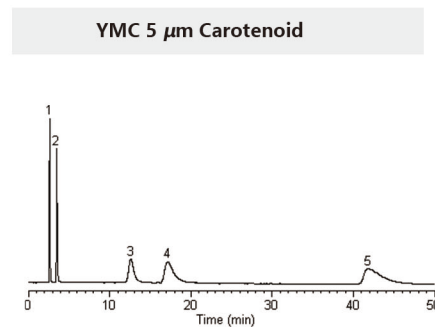
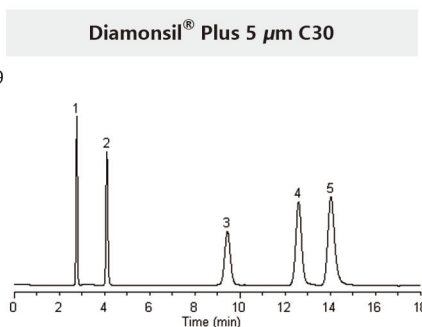
Nucleic Acid Base

Column:	Listed on chromatograms
Dimension:	250×4.6 mm
Mobile Phase:	10 mM K ₂ HPO ₄ , pH 7.0
Flow Rate:	1.0 mL/min
Temperature:	30 °C
Detection:	UV 254 nm
Sample:	1. Cytosine 2. Uracil 3. Cytidine 4. Uridine 5. Thymine



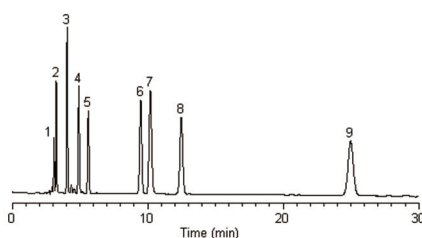
Water-Soluble Vitamin

Column:	Listed on chromatograms
Dimension:	150×4.6 mm
Mobile Phase:	50 mM Phosphate buffer, pH 6.9
Flow Rate:	1.0 mL/min
Temperature:	30 °C
Detection:	UV 254 nm
Sample:	1. Orotic acid 2. Nicotinic acid 3. Pyridoxal 4. Pyridoxine 5. Nicotinamide

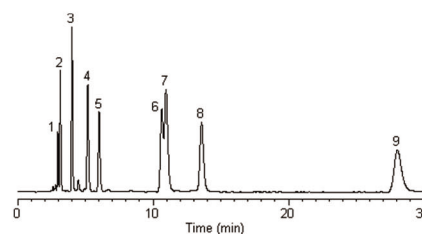


Nucleotide

Diamonsil® Plus 5 µm C30

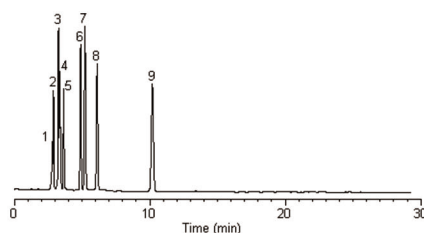


YMC 5 µm Carotenoid



Column: Listed on chromatograms
Dimension: 250x4.6 mm
Mobile Phase: 100 mM KH₂PO₄, pH 6.0
Flow Rate: 1.0 mL/min
Temperature: 30 °C
Detection: UV 260 nm
Sample: 1. 5'-CTP
 2. 5'-CDP
 3. 5'-CMP
 4. 5'-GTP
 5. 5'-GDP
 6. 5'-GMP
 7. 5'-ATP
 8. 5'-ADP
 9. 5'-AMP

Diamonsil® Plus 5 µm C18



Diamonsil® Plus C30 Ordering Information

5 µm Analytical Columns

Guard Cartridges 5/pkg

Phase	150 x 4.6 mm	250 x 4.6 mm	10 x 4.0 mm
Diamonsil® Plus C30	99426	99427	6816

3 µm Analytical Columns

Phase	150 x 4.6 mm	250 x 4.6 mm	10 x 4.0 mm
Diamonsil® Plus C30	—	99428	—

EasyGuard® Guard Holder, Cat #6220

EasyGuard® Holder Direct Connect, Cat #6223

Canada

255 Shields Court, Unit A & B, Markham, ON L3R 8V2, Canada
 Tel: 1-905-944-8066 Fax: 1-905-944-0181
 Toll-Free: 1-866-889-9072
 Email: sales@dimaglass.com
 Business hours: 9 AM - 5 PM EST

USA

51 Massier Lane Foothill Ranch, CA 92610, USA
 Tel: 1-866-889-9072 Fax: 1-866-833-2653
 Email: sale@dikmatech.com
 Business hours: 9 AM - 5 PM PST

Asia / Pacific Area

Room 9, 5F., No.763 Wenlin Road, Shilin District, Taipei City 111, Taiwan
 Email: paulw@dikmatech.com