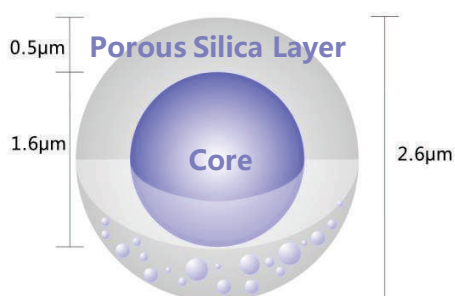


General Description

Sepax Opalshell™-C18 columns use a core-shell bonded silica stationary phase. This core-shell bonded silica particle has a total size of 2.6 μm , comprised of a 1.6 μm solid silica core with a 0.5 μm porous outer layer. The uniform, spherical particles have a nominal surface area of 150 m^2/g with a controlled pore size of 90 \AA . The size distribution of the Opalshell™ particles is much narrower than that of conventional totally porous particles. This leads to reduced inter particle spacing in the column, achieving higher efficiency and performance by less eddy diffusion.

Sepax Opalshell™-C18 columns have great selectivity and peak symmetry for separations of acidic, neutral and basic organic compounds.



Featured Characteristics

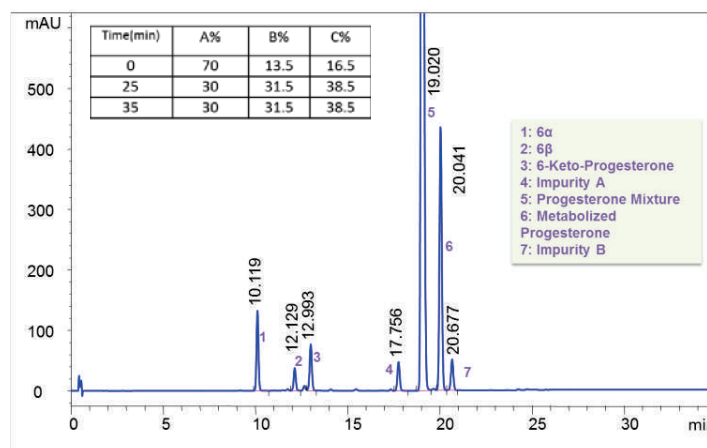
- High resolution with same efficiency as a sub-2 μm particle
- Fast analysis with shorter run time
- Ideal for high-throughput analysis
- High stability with longer lifetime
- Low backpressure, comparable to 3 and 5 μm particles
- Compatible with both UPLC and HPLC for easy method transfer between systems
- Wide pH range: 1.5 – 10.0
- Great selectivity and peak symmetry for separations of acidic, neutral and basic organic compounds

Technical Specifications

Phase	Opalshell™-C18
Material	Core-shell bonded silica with a porous outer layer
Average particle size	2.6 μm
Pore size	90 \AA
Surface area	150 m^2/g
pH stability	1.5 – 10.0
Recommended flow rate range for maximum column lifetime	0.1 - 0.35 mL/min
Recommended operating pressure for maximum column lifetime	< 5,000 psi
Maximum operating temperature	60 $^{\circ}\text{C}$

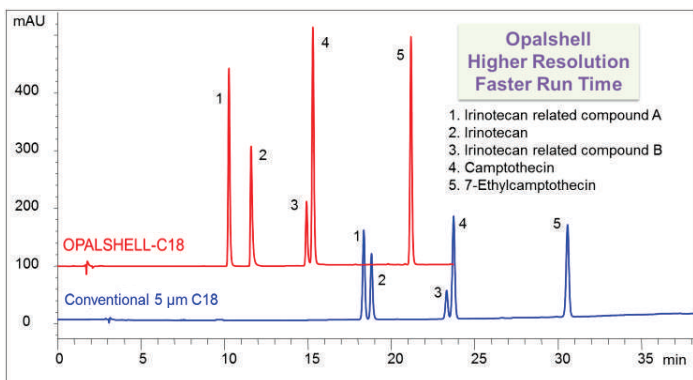
Applications

Progesterone Analysis by Opalshell™-C18



Column: Opalshell™-C18 (2.6 μm , 90 \AA , 4.6 x 50 mm)
Mobile Phase: A :H₂O; B: ACN; C: MeOH (v/v)
Injection: 10 μL
Flow Rate: 1.0 mL/min
Pressure: 120 bar
Detection: UV 241 nm
Temperature: Ambient
Sample: Progesterone sample mixture (0.5 mg/mL)

Irinotecan Analysis by Opalshell™-C18 vs a Conventional 5 μm C18



Column: Opalshell™-C18 (2.6 μm, 90 Å, 4.6 x 100mm)
C18 (5 μm, 4.6 x 250 mm)

Mobile Phase: A: 2.72 g/L KH₂PO₄, pH 3.5 by 1/20 H₃PO₄;
B: ACN : MeOH = 3 : 2

Injection: 10 μL

Flow Rate: 0.6 mL/min

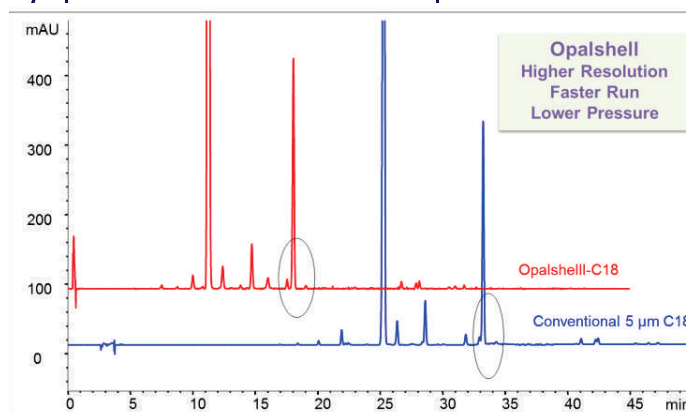
Pressure: 114 bar

Detection: UV 220 nm

Temperature: Ambient

Sample: Irinotecan sample mixture

Overlays of API Crude Sample Analysis by Opalshell™-C18 vs a Conventional 5 μm C18



Column: Opalshell™-C18 (2.6 μm, 4.6 x 50 mm)
C18 (5 μm, 4.6 x 250 mm)

Mobile Phase: A: 0.1% Acetic Acid in Water, B: ACN

Injection: 20 μL

Flow Rate: 1.0 mL/min

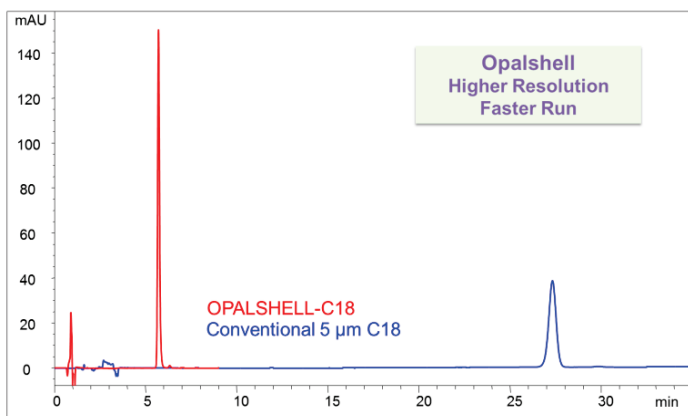
Pressure: 105-165 bar

Detection: UV 254 nm

Temperature: Ambient

Sample: Prednisolone Acetate Tablets (0.05mg/mL)

Overlay of Prednisolone Acetate Analysis by Opalshell™-C18 vs a Conventional 5 μm C18



Column: Opalshell™-C18 (2.6 μm, 4.6 x 50 mm)
C18 (5 μm, 4.6 x 250 mm)

Mobile Phase: ACN : H₂O = 35 : 65 (v/v)

Injection: 10 μL

Flow Rate: 1.0 mL/min

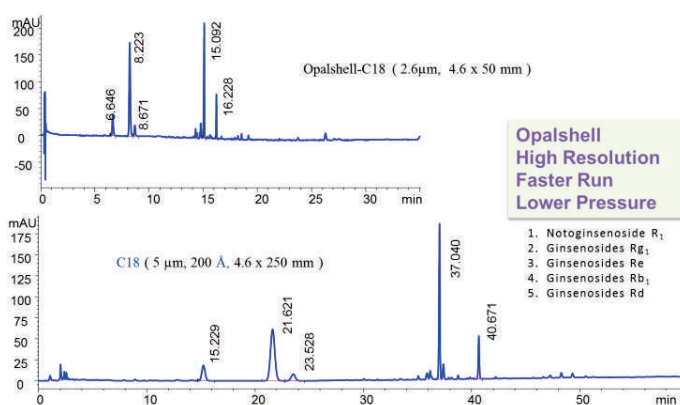
Pressure: 175 bar

Detection: UV 246 nm

Temperature: Ambient

Sample: Prednisolone Acetate Tablets (0.05 mg/mL)

Ginseng Saponins Extract Analysis by Opalshell™-C18 vs a Conventional 5 μm C18



Column: Opalshell™-C18 (2.6 μm, 4.6 x 50 mm)
C18 (5 μm, 200 Å, 4.6 x 250 mm)

Mobile Phase: A: ACN; B: H₂O

Injection: 10 μL

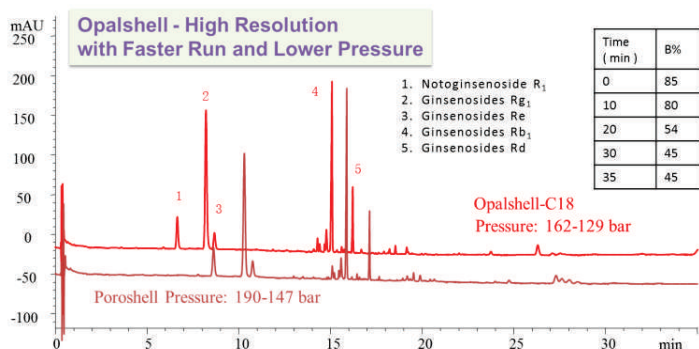
Flow Rate: 1.5 mL/min

Detection: UV 203 nm

Temperature: Ambient

Sample: 2.5 mg/mL diluted by 70% methanol

Ginseng Saponins Extract Analysis – Competition Comparison



Disclaimer: Agilent and Poroshell are registered trademarks of Agilent Technologies; Comparative separations may not be representative of all applications.

Column: Opalshell™-C18 (2.6 µm, 4.6 x 50 mm)
Agilent Poroshell 120 C18 (2.7µm, 4.6 x 50 mm)

Mobile Phase: A: ACN; B: H₂O

Injection: 10 µl

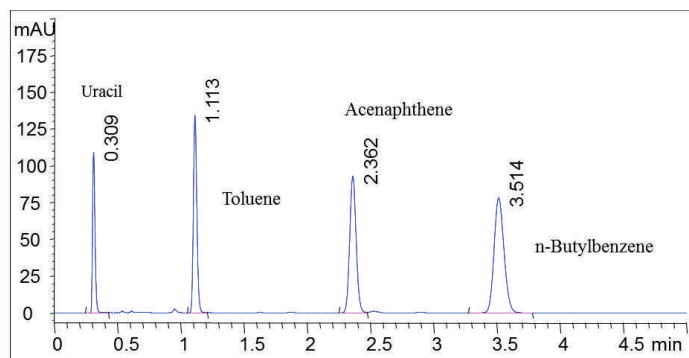
Flow Rate: 1.5 mL/min

Detection: UV 203 nm

Temperature: Ambient

Sample: 2.5 mg/mL diluted by 70% methanol

QC Standards on Opalshell™-C18



Column: Opalshell™-C18 (2.6 µm, 4.6 x 50 mm)

Mobile Phase: ACN : H₂O = 60 : 40 (v/v)

Injection: 1 µL

Flow Rate: 1.5 mL/min

Detection: UV 254 nm

Temperature: Ambient

Sample: Uracil (0.05 mg/mL)
Toluene (5 µL/mL)
Acenaphthene (1.2 mg/mL)
n-Butylbenzene (10 µL/mL)

Ordering Information

Sepax Opalshell™-C18 HPLC Column	
104182-2110	Opalshell-C18, 2.6µm, 90 A 2.1 x 100 mm
104182-2115	Opalshell-C18, 2.6µm, 90 A 2.1 x 150 mm
104182-4605	Opalshell-C18, 2.6µm, 90 A 4.6 x 50 mm
104182-4610	Opalshell-C18, 2.6µm, 90 A 4.6 x 100 mm
Sepax Opalshell™-C18 Guard	
104182-4001C	Guard Cartridge with Holder
104182-4001F	Guard Refill Cartridge (5 pcs/pk)

Column Screening & Method Development Service

- Various column phases including SEC, IEX, HIC and RP from Sepax and other vendors available for screening
- Different buffer systems including mobile phases and gradients for development and optimization
- Cost effective and quick turnaround solutions
- Eliminate uncertainty, accomplish projects with higher success rates

Please contact techsupport@sepax-tech.com for further information or call toll free 1-887-SEPAX-US (option 3) to speak with our technical support team.

Additional resources at www.sepax-tech.com

- Access to application notes of your interested sample type
- Method development training webinars
- Up-to-date listing of where our columns have been cited in the scientific literature
- Easy way to view prices, request quotes and order products

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