

# Achieve **FASTER** LC

with Onyx Monolithic Silica HPLC Columns

- Reduce run times
- Increase throughput
- Rapidly screen dirty or complex samples



Featuring:

**New**  
**Onyx HD Columns**  
for Increased Efficiency!

Архангельск (8182)63-90-72  
Астана (7172)727-132  
Астрахань (8512)99-46-04  
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# Onyx – Monolithic Silica HPLC Columns

**Designed for high speed analysis**, the monolithic nature of Onyx columns allows for “dilute-and-shoot” applications, saving scientists valuable sample preparation time.

Onyx columns feature a dense network of macropores that allows viscous samples and mobile phase to flow through the column less restricted than compared to particle-based columns.

## *Monolithic Technology vs. Particle-Based Technology*

### **Onyx:**

- **Monolithic porous silica rod**
- **Significantly shorter run times**  
Cut methods by more than half
- **Low backpressures**  
Less stress on system and column
- **High flow rates**  
Due to high porosity
- **No inlet bed settling**  
Increased reliability, reproducibility, and lifetime

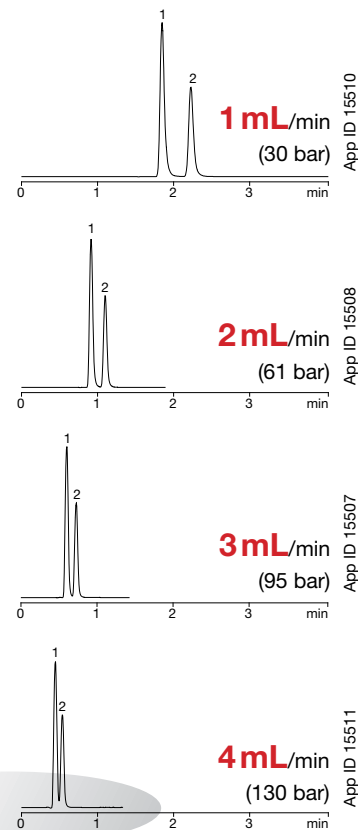
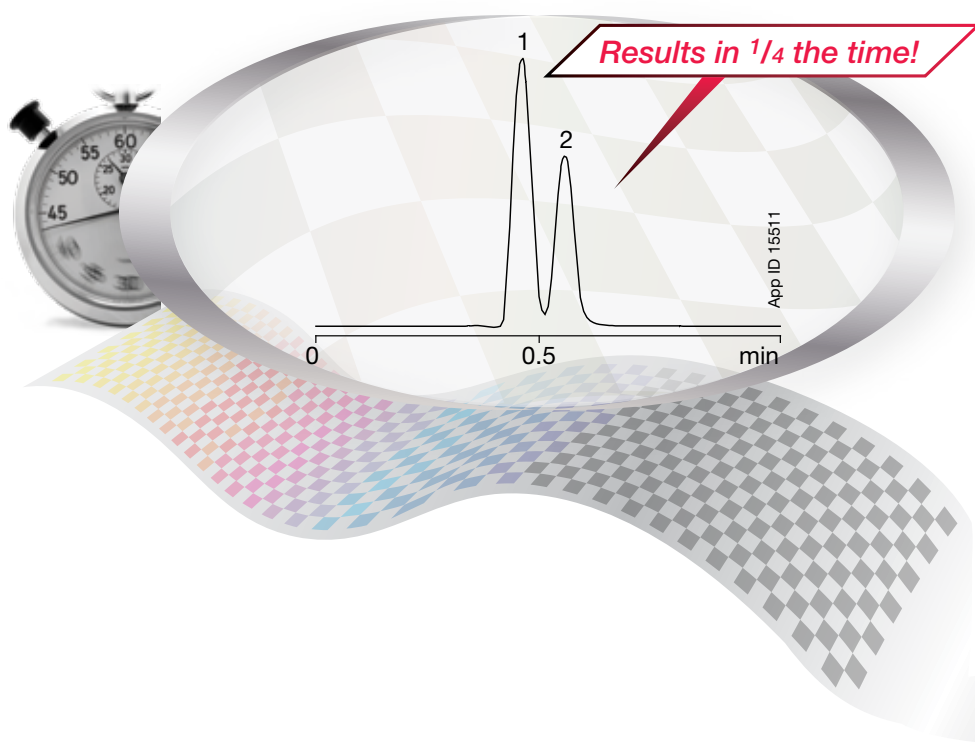
### **Particle-Based Columns:**

- **Individual silica particles**
- **High flow resistance**  
Limits ability to shorten run times
- **Increased backpressure**  
Limits life of pumps, seals, and column
- **Reduced throughput**  
Long run times
- **Bed splitting possible**  
Shortens column life & lessens reproducibility



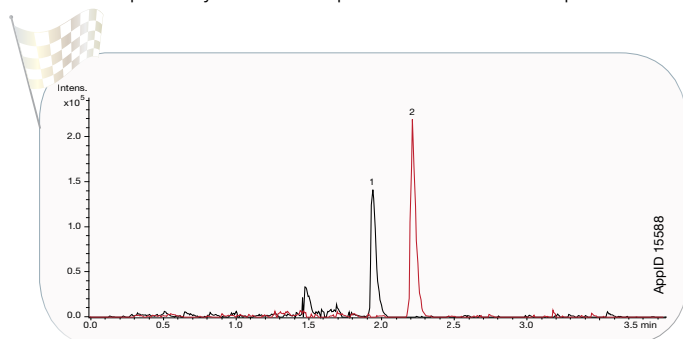
# Increase Sample Throughput and Reduce Analysis Time

Cut run times by more than half!



## ADME / DMPK

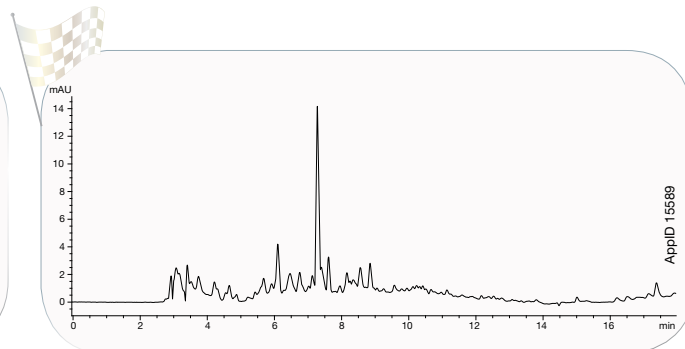
- Wide macropores reduce interference from proteins allowing samples to easily pass through
- Monolithic structure enables rapid gradients with very short re-equilibration times, resulting in methods less than 4 min
- Improved flow characteristics of monoliths results in lower sample carryover for complex matrices like urine plasma



**Sample Prep:** Human urine sample diluted 1:1 with water. 50  $\mu$ L injected  
**Column:** Onyx Monolithic C18  
**Dimensions:** 100 x 4.6 mm  
**Part No.:** CH0-7643  
**Mobile Phase:** A: 0.1 % Formic acid in Water  
 B: 0.1 % Formic acid in Acetonitrile  
**Gradient:** 5 - 90 % B in 4.0 min  
**Flow Rate:** 4.0 mL/min  
**Temperature:** 30  $^{\circ}$ C  
**Detection:** LC/MS ESI + (ambient)  
**Injection:** 1. Nordiazepam (*Diazepam metabolite*) ( $m/z = 271$ )  
 2. Diazepam ( $m/z = 285$ )

## Food and Beverage

- Flow restrictions and overpressures, due to salts, precipitated proteins, and lipids in the sample matrix, are highly unlikely
- Increase resolving power of very complex food extracts by column coupling
- Analyze very dilute or low-level analytes by a direct, high-flow injection onto the column

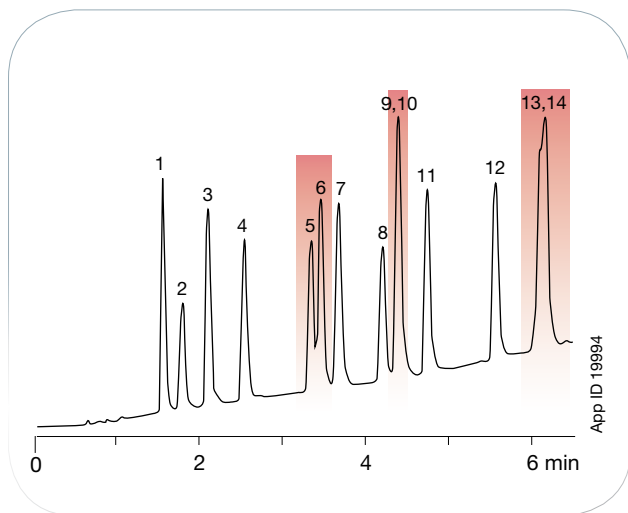


**Column:** Onyx Monolithic C18  
**Dimensions:** 200 x 4.6 mm (2 - 100 x 4.6 mm columns coupled in series)  
**Part No.:** CH0-7643  
**Mobile Phase:** A: 0.1 % TFA in Water  
 B: 0.08 % TFA in Acetonitrile  
**Gradient:** 5-70 % B in 15 minutes  
**Flow Rate:** 1.0 mL/min  
**Temperature:** 30  $^{\circ}$ C  
**Detection:** UV @ 280 nm  
**Sample:** Multi-grain cereal

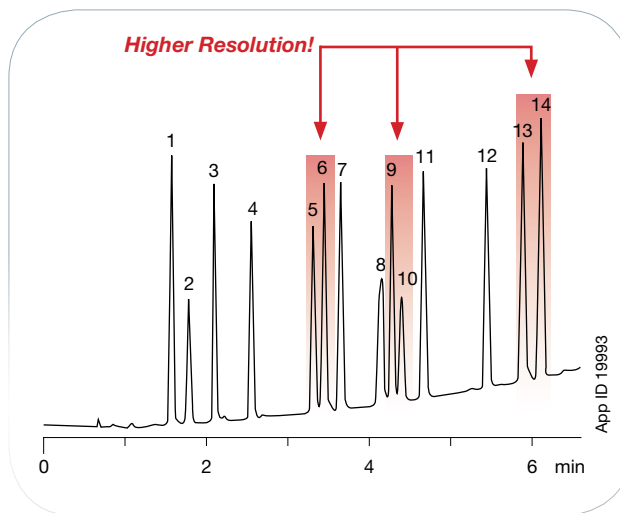
# Onyx HD – A Higher Efficiency Monolithic Column

## Increased Resolution of Steroids with Onyx HD-C18

### Onyx C18



### Onyx HD-C18



Conditions for all columns:

Column: Onyx C18  
Onyx HD-C18

Dimension: 100 x 4.6 mm

Mobile Phase: A: Water

B: Methanol

Gradient: Time (min)	% B
0	45
6	75
6.1	45
9	45

Flow Rate: 1.2 mL/min

Temperature: 25 °C

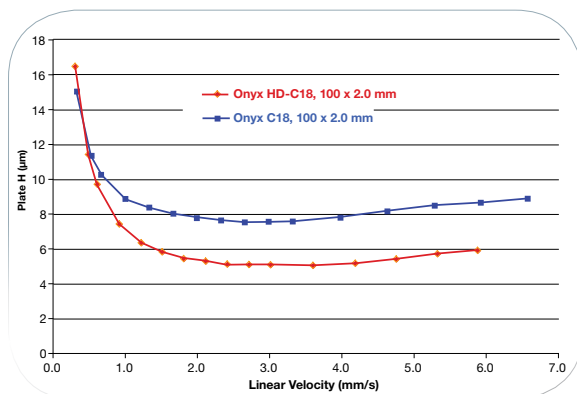
Detection: UV @ 230 nm

Sample: 1. Triamcinolone  
2. Esteriol  
3. Prednisone  
4. Hydrocortisone  
5. Cortisone

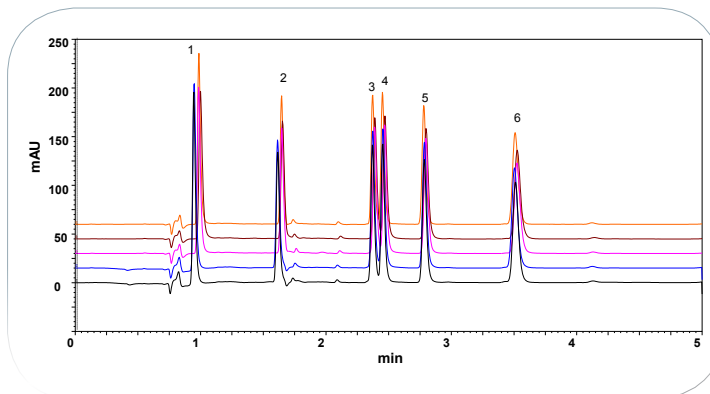
6. Corticosterone  
7. 11- $\alpha$ -Hydroxyprogesterone  
8.  $\beta$ -Estradiol  
9. 21- $\alpha$ -Hydroxyprogesterone  
10.  $\alpha$ -Estradiol

11. 17- $\alpha$ -Hydroxyprogesterone  
12. Deoxycorticosterone  
13. Progesterone  
14. Betamethasone Valerate

## Increased Performance with Onyx HD-C18



## Excellent Batch-to-Batch and Column-to-Column Reproducibility



Column: Onyx HD-C18  
Dimension: 100 x 4.6 mm  
Part No.: CH0-8611  
Mobile Phase: A: Acetonitrile  
B: 20 mM  $\text{NaH}_2\text{PO}_4$  Buffer (pH 7.6)

Gradient: Time (min)	% B
0	80
1	55
5	55

Flow Rate: 1.2 mL/min  
Temperature: Ambient  
Detection: UV @ 254 nm

Sample: 1. Caffeine  
2. Aniline  
3. N-Methylaniline  
4. 2-Ethylaniline  
5. 4-Nitranisole  
6. N,N-Dimethylaniline



# Ordering Information



## Material Characteristics

Packing Material	Macropore Size (µm)	Mesopore Size (Å)	Pore Volume (mL/g)	Surface Area (m <sup>2</sup> /g)	Carbon Load %	Calculated Bonded Phase Coverage (µmole/m <sup>2</sup> )	End Capping
Onyx Silica	2	130	1.0	300	0	0	No
Onyx C8	2	130	1.0	300	11	3.8	Yes
Onyx C18	2	130	1.0	300	18	3.6	Yes
Onyx C18*	1.5	130	1.0	300	18	3.6	Yes
Onyx HD-C18	1	130	1.0	300	18	3.6	Yes

Maximum Pressure: 200 Bar, pH Range: 2.0-7.5

\*50 x 2.0 mm ID only; enhanced 1.5 µm macropore size for higher efficiencies

## Ordering Information

Part No.	Description	Size (mm)	Price
<b>Capillary Columns</b>			
CHO-8388	Onyx Monolithic C18	150 x 0.05	
CHO-7646	Onyx Monolithic C18	150 x 0.1	
CHO-8389	Onyx Monolithic HD-C18	150 x 0.1	
CHO-8390	Onyx Monolithic C18	150 x 0.2	
CHO-8391	Onyx Monolithic HD-C18	150 x 0.2	
CHO-8392	Onyx Monolithic C18 Trapping Column	50 x 0.2	
CHO-8393	Onyx Monolithic C8	150 x 0.1	
<b>Analytical Columns</b>			
CHO-8373	Onyx Monolithic C18	50 x 2.0	
CHO-8467	Onyx Monolithic C18	100 x 2.0	
CHO-8464	Onyx Monolithic C18	25 x 3.0	
CHO-8463	Onyx Monolithic C18	50 x 3.0	
CHO-8158	Onyx Monolithic C18	100 x 3.0	
CHO-7643	Onyx Monolithic C18	100 x 4.6	
CHO-7644	Onyx Monolithic C18	50 x 4.6	
CHO-7645	Onyx Monolithic C18	25 x 4.6	
CHO-8611	Onyx Monolithic HD-C18	100 x 4.6	
CHO-8612	Onyx Monolithic HD-C18	50 x 4.6	
CHO-8613	Onyx Monolithic HD-C18	25 x 4.6	
CHO-7647	Onyx Monolithic C8	100 x 4.6	
CHO-7648	Onyx Monolithic Si	100 x 4.6	
<b>SemiPrep Columns</b>			
CHO-7878	Onyx Monolithic C18	100 x 10.0	
<b>Guard Cartridge System</b>			
KJO-8468	Onyx Monolithic C18 Guard Cartridge Kit (3/pk cartridges + holder)	5 x 2.0	
CHO-8469	Onyx Monolithic C18 Guard Cartridges (3/pk)	5 x 2.0	
KJO-8465	Onyx Monolithic C18 Guard Cartridge Kit (3/pk cartridges + holder)	5 x 3.0	
CHO-8466	Onyx Monolithic C18 Guard Cartridges (3/pk)	5 x 3.0	
KJO-7651	Onyx Monolithic C18 Guard Cartridge Kit (3/pk cartridges + holder + wrench)	5 x 4.6	
CHO-7649	Onyx Monolithic C18 Guard Cartridges (3/pk)	5 x 4.6	
KJO-8615	Onyx Monolithic HD-C18 Guard Cartridge Kit (3/pk cartridges + holder + wrench)	5 x 4.6	
CHO-8616	Onyx Monolithic HD-C18 Guard Cartridge (3/pk)	5 x 4.6	
KJO-7652	Onyx Monolithic C18 Guard Cartridge Kit (3/pk cartridges + holder + wrench)	10 x 4.6	
CHO-7650	Onyx Monolithic C18 Guard Cartridges (3/pk)	10 x 4.6	
<b>Method Validation Kit</b>			
KHO-7653	Onyx Monolithic C18 Method Validation Kit (3 columns from different batches)	100 x 4.6	
<b>Column Coupler</b>			
AQ0-7654	Onyx Column Coupler, 0.020 in. ID		

guarantee

If Onyx analytical columns do not provide at least an equivalent separation as compared to a competing column of the same monolithic characteristics, similar phase, and dimensions, return the column with comparative data within 45 days for a FULL REFUND.



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