PAIN MANAGEMENT TESTING UPGRADED

Combine Phenomenex Sample Preparation and Core-Shell HPLC/UHPLC Solutions for:

- Fast Results
- Reproducible High Performance
- Increased Sensitivity
- Excellent Productivity

phenomenex®
. . . breaking with tradition℠

Guaranteed Solutions

Effective and highly reproducible methodology helps you ensure results and reduce costs. With guaranteed high quality products from Phenomenex, you can easily push your research to the next level.

guarantee

We guarantee that if Phenomenex products in this guide do not provide at least an equivalent separation as compared to other products of the same phase and dimensions, return the product with comparative data within 45 days for a FULL REFUND.

Solid Phase Extraction (SPE)

Strata™-X-Drug B

- Designed and quality controlled for basic drugs of abuse
- Time and solvent saving polymeric strong cation-exchange SPE sorbent
- No equilibration or condition steps needed

Protein Precipitation (PPT)

Impact™

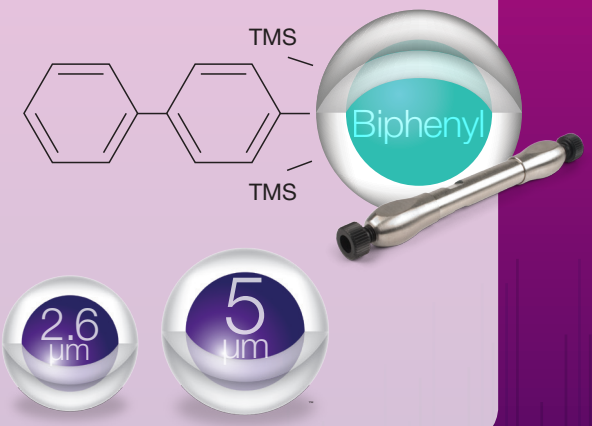
- Complete in plate removal of proteins (β-glucuronidase)
- Increase throughput 3x
- Leak-free oleophobic membrane
- Easily automated

New long drip plate

HPLC/UHPLC Analysis

Kinetex® Biphenyl Core-Shell Technology

- Rugged and reliable core-shell columns
- Incredible performance and efficiencies
- Enhanced polar and basic retention
- Quality controlled for basic drugs of abuse



Rapid, Simple Cleanup

for Pain Management Drugs and Drugs of Abuse

Skip the method development, significantly reduce your sample preparation time, and save solvent using Strata™-X-Drug B SPE tubes and 96-well plates. One method is all you will need to extract over 41 pain management drugs. Or easily upgrade the throughput of your existing protein precipitation methods with the new Impact™ PPT long drip plates.

Sample Pretreatment

Urine:

Acid Hydrolysis

1. To 2 mL urine sample, add 500 µL concentrated hydrochloric acid (HCl)
2. Heat at 90 °C for 2 hours
3. Add 2 mL of 200 mM Sodium acetate buffer (pH 4.0)
4. Add 1 mL of 6 N Potassium hydroxide (KOH). Vortex.
5. Centrifuge for 5-6 minutes at 5,000-5,500 rpm (20-22 °C)
6. Verify pH of sample is between 4.0 – 6.0
7. Load pretreated sample directly onto Strata-X-Drug B sorbent (see procedure below)

Enzymatic Hydrolysis

1. Dilute 500 µL urine with 100 µL buffer* and 20 µL of 1,000,000 units/mL beta-glucuronidase in a 96-well collection plate
2. Vortex for 5-6 seconds
3. Incubate in a water bath at 63 °C for 30 minutes
4. If performing SPE, transfer sample to a 96-well collection plate or autosampler vial, seal and centrifuge for 10 minutes at 2,000 rpm. Load supernatant onto Strata-X-Drug B sorbent (see procedure below).

   If performing rapid removal of β-glucuronidase, load sample directly onto Impact Protein Precipitation plate (see procedure below).

*Buffer prepared by adding 800 mL deionized water and 111 mL glacial acetic acid to a 1 L volumetric flask, adjust final volume to the line with a 50 % KOH solution and mix by inversion.

Serum / Plasma / Saliva:

1. Dilute plasma/serum 3:1 with 1 % Acetic acid
2. Vortex
3. Centrifuge for 5-6 minutes at 3,000-3,500 rpm (20-22 °C)
4. Load pretreated sample directly onto Strata-X-Drug B sorbent (see procedure below)

For Ultra Clean and Concentrated Samples

Strata-X-Drug B SPE Steps

Procedure designed for 60 mg bed mass Strata-X-Drug B and can be adjusted for smaller or larger bed masses.

Condition:	Not required
Equilibrate:	Not required
Load:	Pretreated sample (see above for pretreatment recommendations)
Wash:	2 mL of 100 mM Sodium acetate buffer (pH 5.0)
Wash 2:	2 mL Methanol
Elute:	2 mL Ethyl acetate/Isopropanol/Ammonium hydroxide (pH 5.0) (7:2:1)
Evaporate:	to dryness under a stream of Nitrogen at 50 °C
Reconstitute:	1 mL 15 % Methanol
Inject:	5 µL

Reduce solvent consumption; no condition or equilibration required!

For Rapid Removal of Proteins (Ex. β-Glucuronidase)

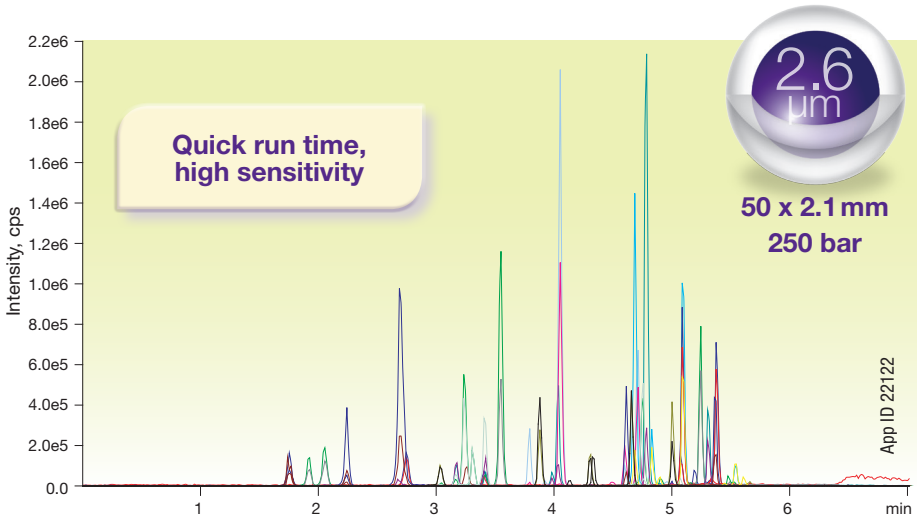
Impact Protein Precipitation Steps

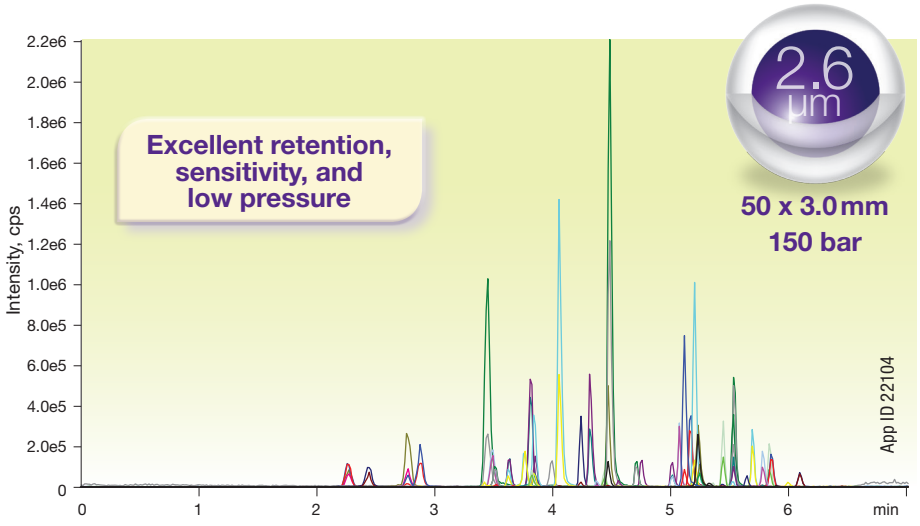
1. Load 300 µL Acetonitrile to the wells of an Impact Plate
2. Load 100 µL hydrolyzed sample directly onto the Impact Plate
3. Vortex for 2 minutes at maximum possible speed
4. Apply vacuum at 2-7 inches Hg for 2-3 minutes and collect filtrate in a collection plate

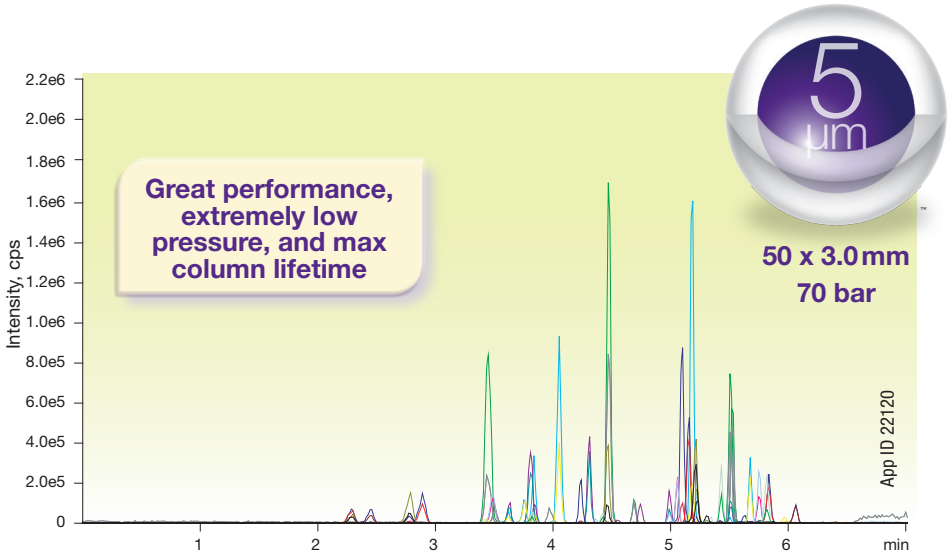
New long drip format now available!

Rapid, Reliable, and High Performance Pain Panel Testing

The new Kinetex® Biphenyl ensures that your comprehensive screens display the needed performance with a ruggedness and reliability that will keep you at ease.







Conditions for all separations:

Column: Kinetex 2.6 µm Biphenyl (50 x 2.1 mm)
Kinetex 2.6 µm Biphenyl (50 x 3.0 mm)
Kinetex 5 µm Biphenyl (50 x 3.0 mm)

Mobile Phase: A: Water with 0.1 % Formic Acid
B: Methanol with 0.1 % Formic Acid

Gradient:

Time (min)	%B
0	10
0.5	10
2	25
4.5	80
4.51	85
5.5	85
5.51	10
7	10

Flow Rate: 0.6 mL/min

Temperature: 40 °C

Detection: MS/MS (AB SCIEX API 5000™)

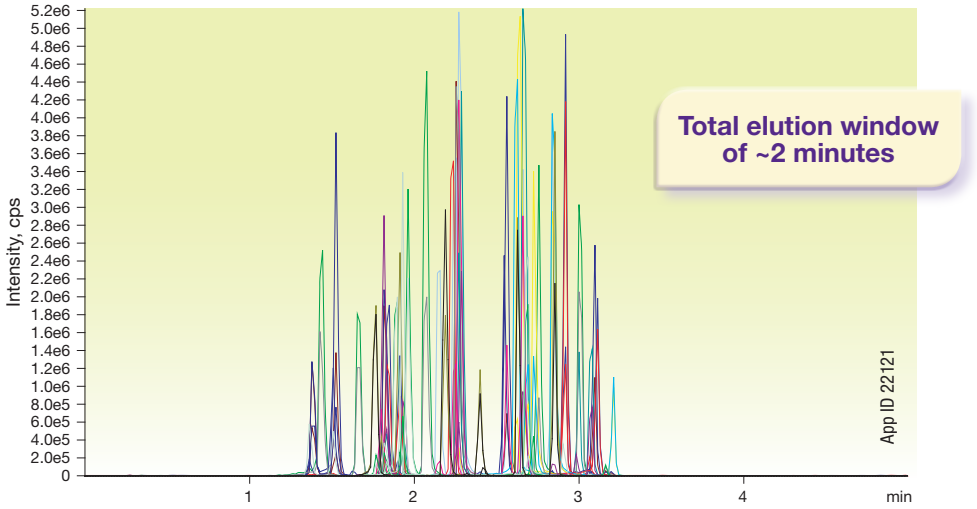
Samples:

1. Morphine
2. Oxymorphone
3. Hydromorphone
4. Amphetamine
5. Methamphetamine
6. MDA
7. Naloxone
8. Codeine
9. 6-MAM
10. Oxycodone
11. MDMA
12. Naltrexone
13. Hydrocodone
14. MDEA
15. Norfentanyl
16. Tramadol
17. Benzoylecgonine
18. Meprobamate
19. Normeperidine
20. Meperidine
21. Norbuprenorphine
22. Fentanyl
23. Buprenorphine
24. Flurazepam
25. PCP
26. Carisoprodol
27. Propoxyphene
28. Midazolam
29. Sufentanil
30. Norpropoxyphene
31. EDDP
32. Lorazepam
33. Methadone
34. Clonazepam
35. Oxazepam
36. Hydroxyalprazolam
37. Nordiazepam
38. Flunitrazepam
39. Temazepam
40. Alprazolam
41. Diazepam

Go Even Faster!

Using the high performance and versatility of the Kinetex® 2.6 µm Biphenyl with a ballistic gradient allows you to cut down even more time from your cycles and significantly improve productivity. Imagine what you can do with this solution on your multiplex or dual-stream systems.

Kinetex 2.6 µm Biphenyl 50 x 3.0 mm



Conditions:

Column:	Kinetex 2.6 µm Biphenyl
Dimension:	50 x 3.0 mm
Part No.:	00B-4622-Y0
Mobile Phase:	A: Water with 0.1 % Formic Acid
	B: Methanol with 0.1 % Formic Acid

Gradient:

Time (min)	%B
0	10
2.5	100
3.5	100
3.51	10
5	10

Flow Rate:	0.7 mL/min
Temperature:	40 °C
Detection:	MS/MS (AB SCIEX API 5000™)

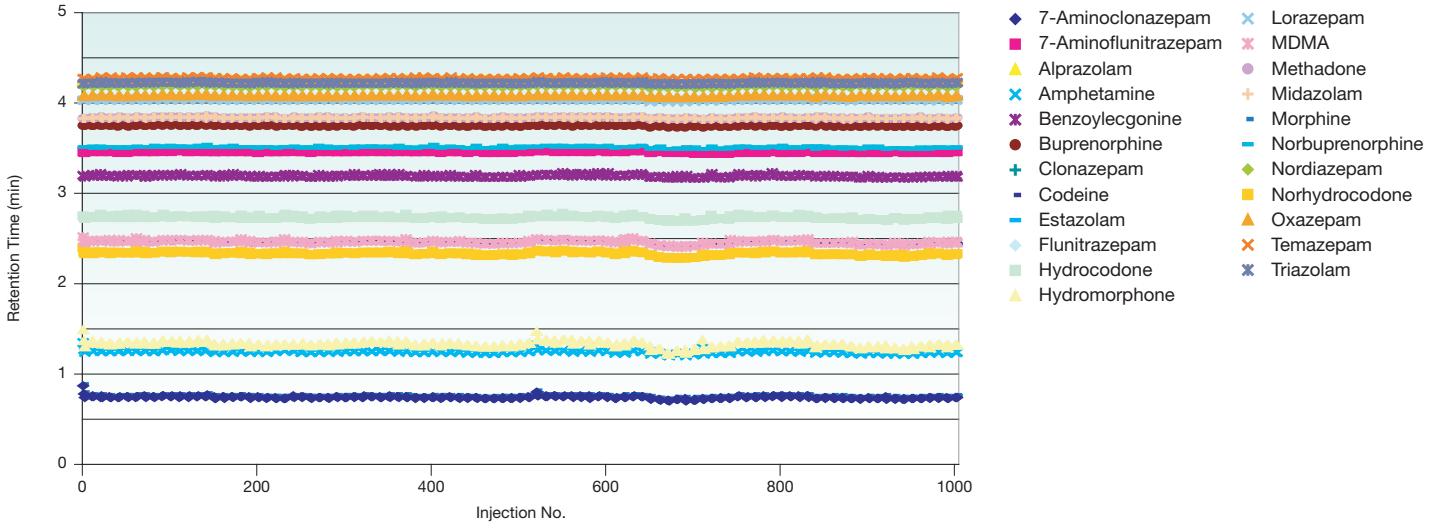
Analyte	Q1	Q3	Retention Time (min)
Morphine	286.2	152	1.38
Oxymorphone	302.1	227	1.44
Hydromorphone	286.2	185	1.53
Amphetamine	136.1	91	1.68
Naloxone	328.1	165.2	1.78
Methamphetamine	150.1	91.2	1.84
Codeine	300.1	152.1	1.85
MDA	180.1	133	1.86
Oxycodone	316.2	241	1.92
Naltrexone	342.2	267.1	1.94
Hydrocodone	300.1	199.1	1.96
MDMA	194.1	163.2	1.99
MDEA	208.2	163.2	2.11
Norfentanyl	233.2	84.1	2.2

Analyte	Q1	Q3	Retention Time (min)
Tramadol	264.2	58.1	2.24
Benzoylecgonine	290.2	168.1	2.3
Meperidine	248.2	220	2.33
Meprobamate	219.2	158.2	2.35
Norbuprenorphine	414.3	83.2	2.41
Fentanyl	337.2	105.1	2.63
Buprenorphine	468.3	55.2	2.63
Flurazepam	388.2	315.1	2.7
Carisoprodol	261.2	176.2	2.73
PCP	244.3	91	2.74
Propoxyphene	340.2	266.3	2.75
Sufentanil	387.2	238.2	2.77
6-MAM	328.1	165.2	2.8
Midazolam	326.1	291.1	2.83

Analyte	Q1	Q3	Retention Time (min)
Normeperidine	234.1	160.2	2.85
EDDP	278.3	234.2	2.95
Methadone	310.2	265.2	2.98
Lorazepam	321	275.1	2.98
Clonazepam	316	270.1	3.03
Norpropoxyphene	308.2	100.1	3.05
Oxazepam	287.1	241	3.05
Hydroxyalprazolam	325.1	297	3.12
Nordiazepam	271.1	140	3.12
Flunitrazepam	314.1	268.2	3.21
Temazepam	301.1	255.1	3.24
Alprazolam	309.1	281	3.26
Diazepam	285.1	193.1	3.37

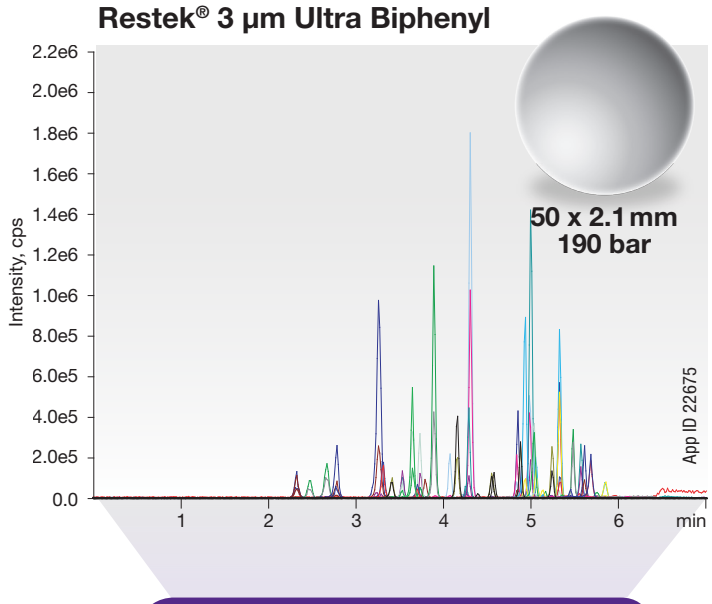
Extended Lifetime with Biological Samples

Kinetex Biphenyl Stability in Urine (First 1000 injections)

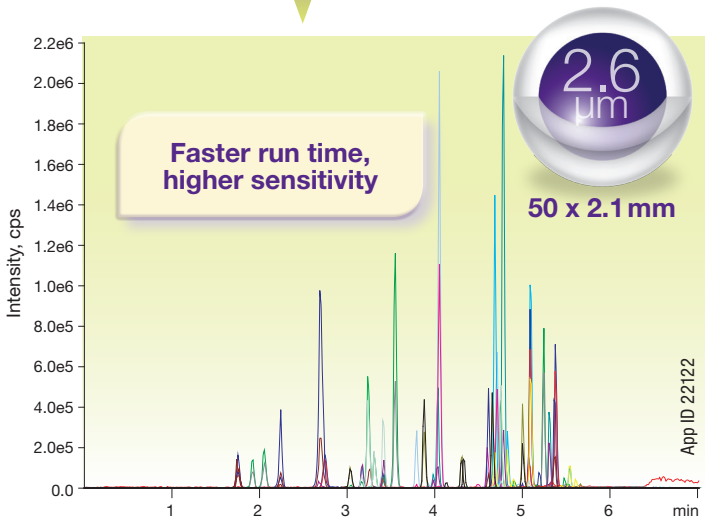


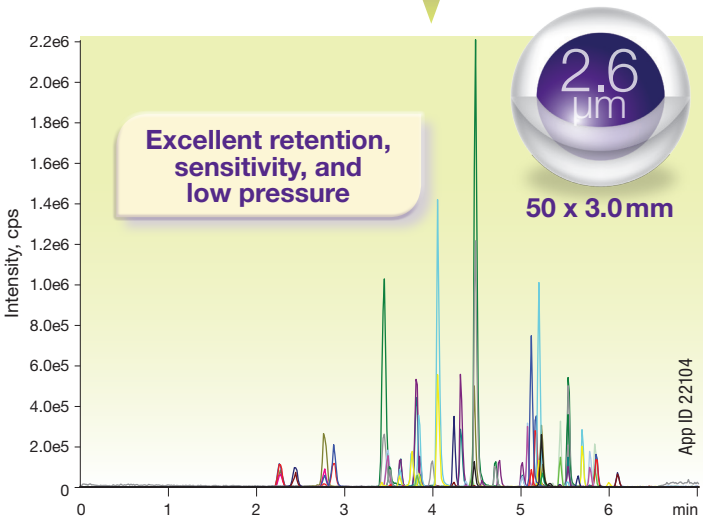
It's Time to Upgrade to Kinetex® Biphenyl

Easily adjust your current fully porous methodology to get performance benefits:



The Kinetex Upgrade





Conditions for all separations:

Column: Restek 3 µm Ultra Biphenyl (50 x 2.1 mm)
Kinetex 2.6 µm Biphenyl (50 x 2.1 mm)
Kinetex 2.6 µm Biphenyl (50 x 3.0 mm)

Mobile Phase: A: Water with 0.1 % Formic Acid
B: Methanol with 0.1 % Formic Acid

Gradient:

Time (min)	%B
0	10
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2	25
4.5	80
4.51	85
5.5	85
5.51	10
7	10

Flow Rate: 0.6 mL/min

Temperature: 40 °C

Detection: MS/MS (AB SCIEX API 5000™)

Samples:

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39. Temazepam
40. Alprazolam
41. Diazepam

Ordering Information

strata-X

STRATA-X-DRUG B

Format	Sorbent Mass	Part Number	Unit	Price
Tube				
	10 mg	8B-S128-AAK	1 mL (100/box)	
	30 mg	8B-S128-TAK	1 mL (100/box)	
	30 mg	8L-S128-TAK†	1 mL (100/box)	
	30 mg	8B-S128-TBJ	3 mL (50/box)	
	60 mg	8B-S128-UBJ	3 mL (50/box)	
	60 mg	8B-S128-UCH	6 mL (30/box)	
	60 mg	8B-S128-UCL	6 mL (200/box)	
96-Well Plate				
	10 mg	8E-S128-AGB	2 Plates/box	
	30 mg	8E-S128-TGB	2 Plates/box	
	60 mg	8E-S128-UGB	2 Plates/box	

† Tab-less tube

Impact™

IMPACT PROTEIN PRECIPITATION

96-Well Plate			
Part No.	**Description**	**Unit**	**Price**
CE0-7565	Impact Protein Precipitation 2 mL Square Well Filter Plate	2/Box	
CE0-7566	Impact Protein Precipitation Long Drip 2 mL Square Well Filter Plate	2/Box	

ACCESSORIES FOR SPE TUBES

Manifolds			
Part No.	**Description**	**Unit**	**Price**
AH0-6023	SPE 12-Position Vacuum Manifold Set, complete assembly	ea	
AH0-6024	SPE 24-Position Vacuum Manifold Set, complete assembly	ea	

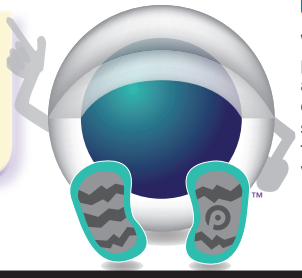
ACCESSORIES FOR 96-WELL PLATES

Manifold			
Part No.	**Description**	**Unit**	**Price**
AH0-8950	96-Well Plate Manifold, Universal w/vacuum gauge	ea	
Collection Plates (deep well, polypropylene)			
Part No.	**Description**	**Unit**	**Price**
AH0-7192	96-Well Collection Plate, 350 µL/Conical	50/pk	
AH0-7193	96-Well Collection Plate, 1 mL/Conical	50/pk	
AH0-7279	96-Well Collectin Plate, 1 mL Round, 7 mm	50/pk	
AH0-8635	96-Well Collection Plate, 2 mL Square/ Round-Conical	50/pk	
AH0-8636	96-Well Collection Plate, 2 mL Round/Round, 8 mm	50/pk	
Sealing Mats			
Part No.	**Description**	**Unit**	**Price**
AH0-8597	Sealing Mats, Pierceable, 96-Square Well, Silicone	50/pk	
AH0-8631	Sealing Mats, Pierceable, 96-Round Well 7 mm, Silicone	50/pk	
AH0-8633	Sealing Mats, Pierceable, 96-Round Well 8 mm, Silicone	50/pk	
AH0-7362	Sealing Tape Pad	10/pk	

KINETEX Core-Shell Technology

Kinetex core-shell columns come in a variety of phases, dimensions, and particle sizes.

Visit www.phenomenex.com/kinetex for more info.



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KINETEX 2.6 µm COLUMNS (mm)

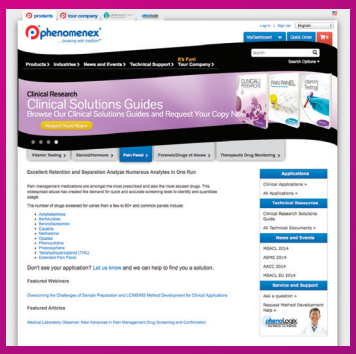
							SecurityGuard™ ULTRA Cartridges‡		
Phases	**50 x 2.1**	**100 x 2.1**	**50 x 3.0**	**50 x 4.6**	**100 x 4.6**	**150 x 4.6**	**3/pk**	**3/pk**	**3/pk**
Biphenyl	00B-4622-AN	00D-4622-AN	00B-4622-Y0	00B-4622-E0	00D-4622-E0	00F-4622-E0	AJ0-9209 for 2.1 mm ID	AJ0-9208 for 3.0 mm ID	AJ0-9207 for 4.6 mm ID

KINETEX 5 µm COLUMNS (mm)

							SecurityGuard™ ULTRA Cartridges‡		
Phases	**50 x 2.1**	**50 x 3.0**	**50 x 4.6**	**100 x 4.6**	**150 x 4.6**	**250 x 4.6**	**3/pk**	**3/pk**	**3/pk**
Biphenyl	00B-4627-AN	00B-4627-Y0	00B-4627-E0	00D-4627-E0	00F-4627-E0	00G-4627-E0	AJ0-9209 for 2.1 mm ID	AJ0-9208 for 3.0 mm ID	AJ0-9207 for 4.6 mm ID

‡SecurityGuard ULTRA cartridges require holder, Part No. AJ0-9000.

Download guides, access on demand webinars, and search our application database at:



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