

Pain Management Drugs

- Comprehensive drug research panel in under 4 minutes
- Fast class-specific drug applications
- 3 different research panel formats and selectivities to choose from
- Simplified, rapid, diverse sample clean-up



APPLICATION SOLUTIONS

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FULL PAIN PANEL SCREEN

Choose from 3 different core-shell formats or stationary phases to customize your work

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ANALYZE INDIVIDUAL CLASSES OF DRUGS

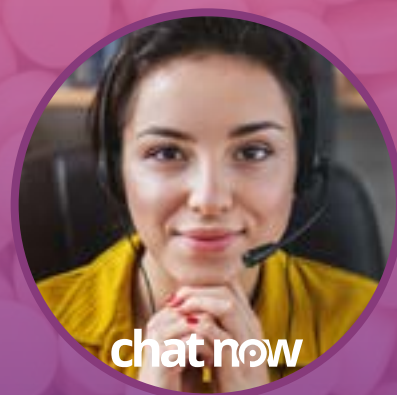
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You



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Simple Sample Preparation

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.

Solid Phase Extraction (SPE)

Strata-X-Drug B Plus

- In-well hydrolysis to save time
- Designed and quality controlled for basic drugs of abuse
- No equilibration or condition steps needed



Strata-X PRO

- Polymeric SPE Sorbent with Matrix Removal Technology
- Reduce protocol time by at least 40% with 3- and 2-step SPE
- High recoveries without conditioning or equilibration steps needed



Filtration Products

β-Gone Plus

- β-glucuronidase removal in 1-step and less than 1 minute along with in-well hydrolysis
- No method development
- 3x greater sensitivity than dilute-and-shoot
- Increases column lifetime



Phree

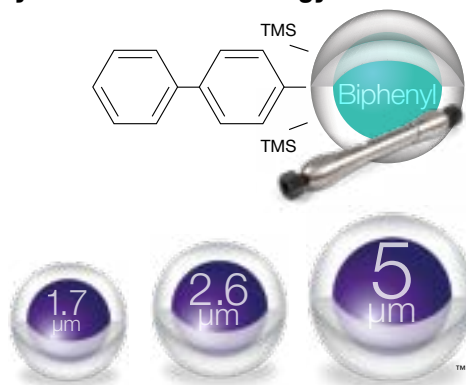
- Eliminate ion-suppression by removing phospholipids
- Extend HPLC/UHPLC column lifetime by removing phospholipids that can build up on your column
- Skip the method development; one method for acids, bases, and neutrals



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

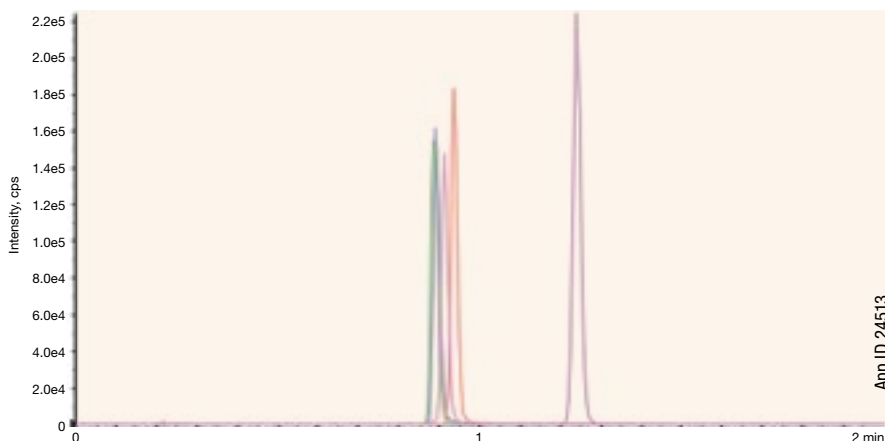


Fast LC Method Using a Ballistic Comprehensive Drug Research Panel

Detection Mode: LC-MS/MS

Stationary Phase: Kinetex Core-Shell Biphenyl MercuryMS™ Cartridge

XIC of Negative Mode Panel



LC-MS/MS Conditions

Column: Kinetex® 2.6 µm Biphenyl*

Dimensions: 20 x 4.0 mm

Part No.: [00M-4622-D0-CE](#)

Mobile Phase: A: 0.1% Formic acid in Water
B: 0.1% Formic acid in Methanol

Gradient: Time (min)	% B
0	30
0.1	95
0.8	95
0.81	30
2	30

Flow Rate: 0.8 mL/min

Injection: 10 µL

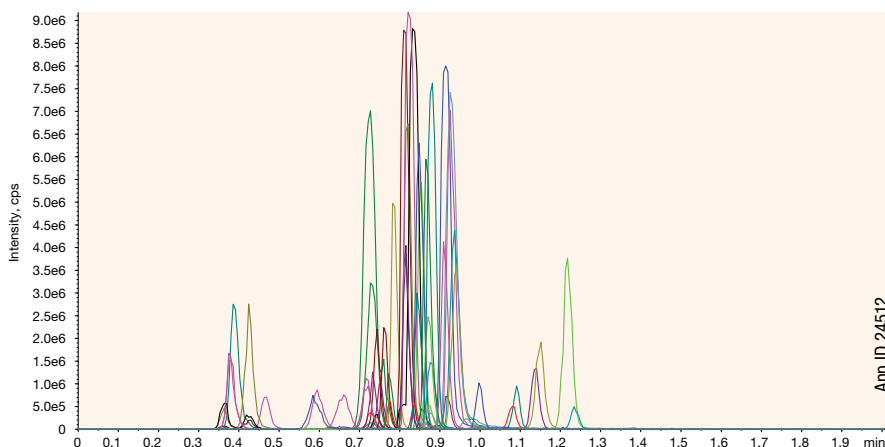
Volume:

Temperature: Ambient

Detection: MS/MS SCIEX® Triple Quad™ 4500 (ESI+ and -)

*requires MercuryMS Cartridge Holder

XIC of Positive Mode Panel

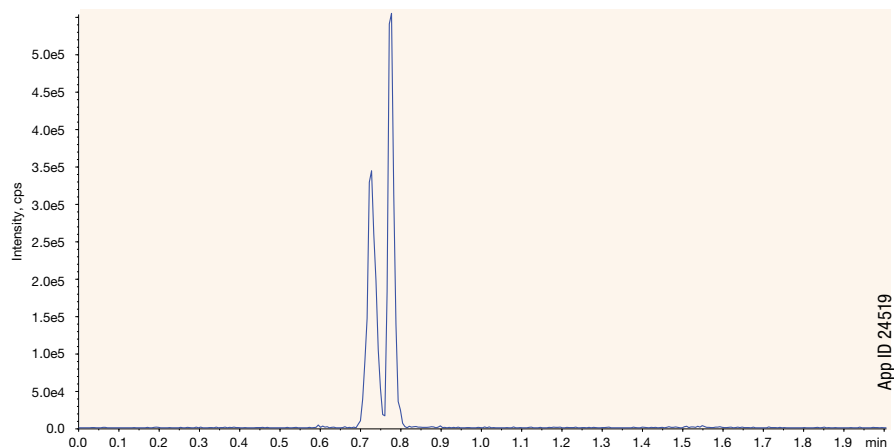


Morphine Isomers/Isobars on Kinetex Biphenyl in MercuryMS Cartridge Format



Fast LC Method Using a Ballistic Comprehensive Drug Research Panel (cont'd)

Codeine/Hydrocodone on Kinetex® Biphenyl in MercuryMS Cartridge Format



List of Positive Mode Panel Analytes

Analyte	Retention Time (min)	Analyte	Retention Time (min)
6-MAM	0.85	Meprobamate	0.73
7-Aminoclonazepam	0.97	Methadone	0.80
Alprazolam	0.73	Methamphetamine	1.15
Amitriptyline	0.83	Methylphenidate	0.94
Amphetamine	0.36	Morphine	0.58
α-OH-Alprazolam	0.66	Naloxone	1.08
Benzoylcegonine	0.85	Norbuprenorphine	0.85
Buprenorphine	1.09	Nordiazepam	0.87
Carisoprodol	0.82	Norfentanyl	0.92
Citalopram	0.74	Norhydrocodone	0.87
Cocaine	0.72	Noroxycodone	0.84
Codeine	0.93	Nortriptyline	0.73
Cotinine	0.73	O-Desmethyl-cis-tramadol	0.39
Diazepam	0.73	Oxycodone	1.22
EDDP	0.38	Oxymorphone	0.94
Fentanyl	0.91	Paroxetine	0.88
Fluoxetine	0.91	PCP	0.87
Gabapentin	0.47	Pregabalin	0.59
Hydrocodone	0.81	Ritalinic Acid	0.78
Hydromorphone	0.81	Tapentadol	0.43
Imipramine	1.14	Temazepam	0.93
Lorazepam	1.23	THC-COOH	1.00
MDA	0.82	Tramadol	0.75
MDMA	0.88	Zolpidem	0.79
Meperidine	0.82	Zolpidem Phenyl-4-Carboxy	0.84

List of Negative Mode Analytes

Compound	Retention Time (min)
Amobarbital	0.89
Butalbital	0.89
Phenobarbital	0.91
Secobarbital	0.94
THC-COOH	1.24

Choose Your Matrix

Serum, Whole Blood, or Urine

Detection Mode: LC-MS/MS

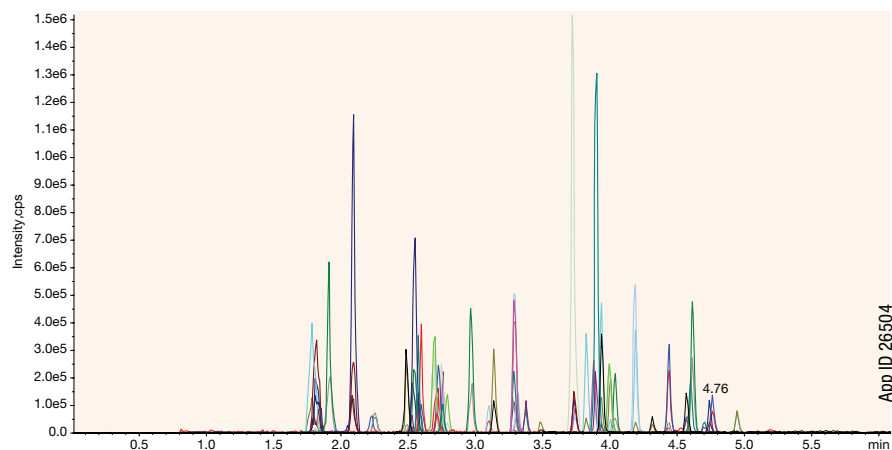
Stationary Phase: Kinetex Core-Shell Biphenyl

Column: Kinetex® 2.6 µm Biphenyl	Gradient:	Time (min)	% B
Dimensions: 50 x 3.0 mm		0	15
Part No.: 00B-4422-Y0		3.5	95
Mobile Phase: A: 0.1 % Formic acid in Water		5	95
B: 0.1 % Formic acid in Methanol		5.01	15
		7	15

Flow Rate: 0.5 mL/min
Injection Volume: 5 µL
Temperature: Ambient
Detection: SCIEX® 4500™ MS/MS (ESI+)

Serum Sample Prep

Serum and plasma pretreatments are analyte dependent and then once performed, the matrix can be cleaned up with a simple phospholipid removal product to create a clean baseline free of ion suppression.



Sample Pretreatment: 200 µL of serum was aliquoted into a tube and 600 µL of chilled (0 to -20°C) Acetonitrile/Methanol (95:5) was added and vortex/mixed for 5-10 seconds. The tube was centrifuged at 3000 rpm for 10 minutes and the supernatant was collected and 25 µL of 1% formic acid was added.

Load: Pre-treated sample onto the Phree™ 96-Well Plate

Part No.: 8E-S133-TGB

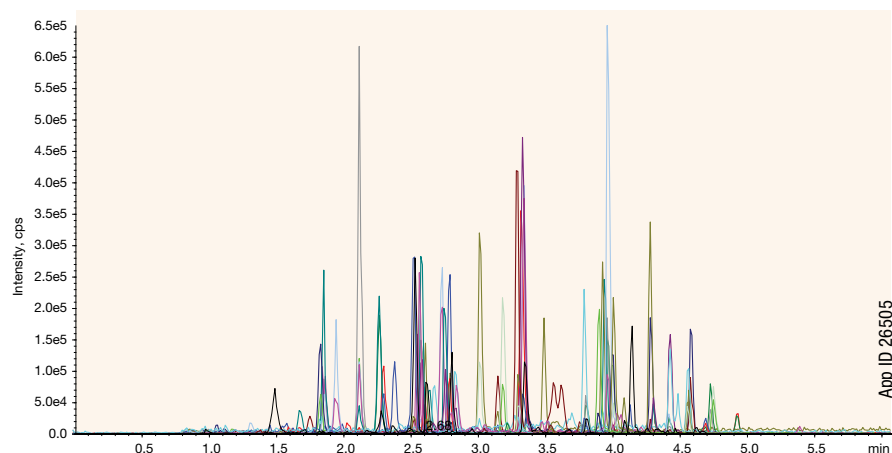
Vacuum: 4-5 psi to collect supernatant

Dry Down: Sample under a gentle stream of Nitrogen at 40-45°C

Reconstitute: In 200 µL initial mobile phase

Urine Sample Preparation

Common matrix that needs beta-glucuronidase removed prior to LC injection which is performed by a quick hydrolysis pre-treatment in the SPE well with a simple reduced protocol following.



Sample Pretreatment: Combine 200 µL urine sample spiked with 40 µL internal standard (500 ng/mL), 60 µL hydrolysis buffer, 20 µL of IMCSzyme® RT enzyme (Part No.: 04-RTB-030), on the Strata®-X-Drug B Plus 30 mg plate (Part No.: 8E-S128-TGB-P). Incubate at room temperature for 15 minutes.

Load: Add 200 µL 0.1 % Formic acid in Water to the plate

Wash 1: 1 mL of 0.1 % Formic acid in Water

Wash 2: 1 mL of Water/Methanol (70:30)

Dry: 5 minutes at high vacuum (15-20" Hg)

Elute: 2x 0.5 mL Ethyl acetate/Isopropanol/Ammonium hydroxide (7:2:1)

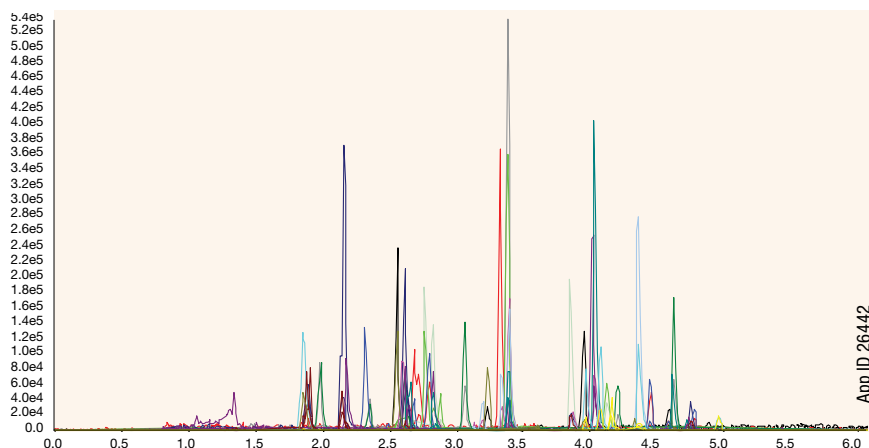
Dry Down: Under gentle stream of Nitrogen at 40-45 °C

Reconstitute: 200 µL initial mobile phase

Choose Your Matrix (cont'd)

Whole Blood Sample Prep

Breakdown of this complex matrix must occur prior to analysis followed by a phospholipid removal for a simple, yet effective sample preparation method to yield accurate MS results without ion suppression.



Sample Pretreatment: 200 µL of serum was aliquoted into a tube and 600 µL of chilled (0 to -20°C) Acetonitrile/Methanol (95:5) and 50 µL 5% ZnSO₄ (w/v) was added to it. Vortex/mix the tube for 5-10 secs. The tube was centrifuged at 3000 rpm for 10 minutes and the supernatant was collected and 25 µL of 1% formic acid was added.

Load: Pre-treated sample onto the Phree™ 96-Well Plate

Part No.: [8E-S133-TGB](#)

Vacuum: 4-5 psi to collect supernatant

Dry Down: Sample under a gentle stream of Nitrogen at 40-45°C

Reconstitute: In 200 µL initial mobile phase

Peak No.	Analyte Name	RT (min)	Q1	Q3	Serum Phospholipid Removal		Whole Blood Phospholipid Removal		Urine SPE	
					% Rec.	% CV (N=4)	% Rec.	% CV (N=4)	% Rec.	% CV (N=4)
1	Alprazolam	4.8	309.1	281.1	107	5.6	108	5.5	74	6.7
2	Amphetamine	2.3	136.1	91.1	81	8.8	107	4.9	84	11.3
3	Benzoylcegonine	3.3	290.1	168.1	91	13.8	102	3.1	77	7.1
4	Codeine	2.6	300.2	152.1	91	15.2	76	13.9	86	5.4
5	Diazepam	4.9	285	193.2	91	12	98	5.7	73	11.9
6	MDMA	2.9	194.1	105.1	95	12.4	104	13.7	81	12.2
7	Methamphetamine	2.6	150.1	91	85	15	103	2.8	81	8.5
8	Norbuprenorphine	3.6	414.3	83.2	93	13.4	85	12.4	92	11.4
9	Oxazepam	4.4	287	241	100	5.1	106	7.8	74	4
10	Oxymorphone	2	302.1	227	73	4.8	81	8.9	99	11.1
11	PCP	4	244.3	91	95	10.3	111	3.3	91	4.4
12	Propoxyphene	4	340.3	266.3	100	10.6	89	12	97	11
13	Sufentanil	4.1	387.2	238.1	90	3.2	114	3.1	81	12.8
14	6MAM	2.57	328.1	165.1	80	13.5	83	3.3	91	14.6
15	Buprenorphine	3.9	468.3	55.2	97	10.6	113	10.5	71	12
16	Carisoprodol	3.9	261.1	176.2	98	11	86	5.3	80	14.5
17	Clonazepam	4.4	316.1	270.1	96	6.5	99	5.7	81	8
18	EDDP	4.2	278.2	234.2	88	4.8	82	11.6	80	12.8
19	Fentanyl	3.9	337.3	105.1	105	11.6	112	1.6	94	10.1
20	Flunitrazepam	4.7	314.1	268.2	97	3.3	83	9.1	81	7.6
21	Flurazepam	4	388.2	315.2	104	3.8	109	3.9	87	13
22	Hydrocodone	2.8	300.2	199	94	14.2	104	11.3	89	3.9
23	Hydromorphone	2.1	286.1	185.1	82	12.6	103	8.7	91	8.6
24	Lorazepam	4.3	321	275	109	12.3	86	15.3	79	9.3
25	MDA	2.7	180.1	133	93	8.8	90	4.4	94	7
26	MDEA	3	208.2	163	91	15.3	106	13.8	84	9.6
27	Meperidine	3.4	248.2	220.2	95	7.2	108	2.5	89	4.6
28	Methadone	4.4	310	265	99	7.1	105	3.1	99	6.9
29	Midazolam	4.1	326.1	291.1	93	8.6	108	5.5	76	13.4
30	Morphine	1.9	286.1	152.1	94	5.4	88	5.2	87	9.8
31	Naloxone	2.56	328.2	212	104	8.5	88	8.2	86	7.6
32	Naltrexone	2.8	342.2	267.1	92	10.5	84	15	98	3.7
33	Nordiazepam	4.64	271	140	98	8.9	105	1.6	82	5.5
34	Norfentanyl	3.2	233.2	84.1	94	11.2	97	4.3	87	5.7
35	Normeperidine	3.4	234.1	160.1	86	13.1	106	4.9	94	13.7
36	Norpropoxyphene	4.1	308.2	100.1	97	4.4	98	11.7	112	10.9
37	Oxycodone	2.8	316.1	241.2	110	7.6	86	8.2	87	11.4
38	Temazepam	4.7	301.1	255.1	89	5.8	110	3.1	76	12
39	Tramadol	3.2	264.1	58.1	89	13.9	104	9	95	8.7
% Recovery range for 39 analytes					73-110%		76-114%		71-99%	

Comprehensive Drug Research Panel Using C18 Selectivity

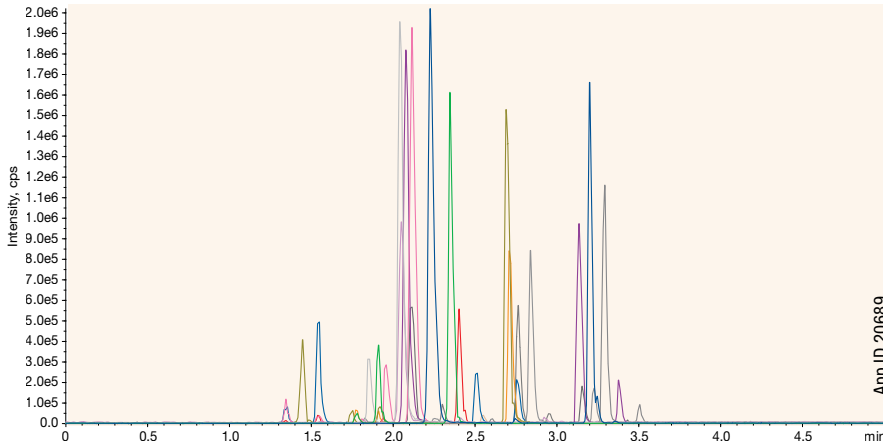
Detection Mode: LC-MS/MS
Stationary Phase: Kinetex® Core-Shell C18

Rapidly separate 41 drugs, including critical isobars, using Kinetex core-shell C18 HPLC/UHPLC columns.

Column: Kinetex 2.6µm C18
Dimensions: 50 x 3.0mm
Part No.: [00B-4462-Y0](#)
Guard: SecurityGuard™ ULTRA C18
 Cartridges: [AJ0-8775](#)
 SecurityGuard™ ULTRA Holder: [AJ0-9000](#)
Mobile Phase: A: 10 mM Ammonium formate
 B: 0.1 % Formic acid in Methanol
Gradient:

Time (min)	% B
0	5
3	100
4	100
4.1	5
5	5

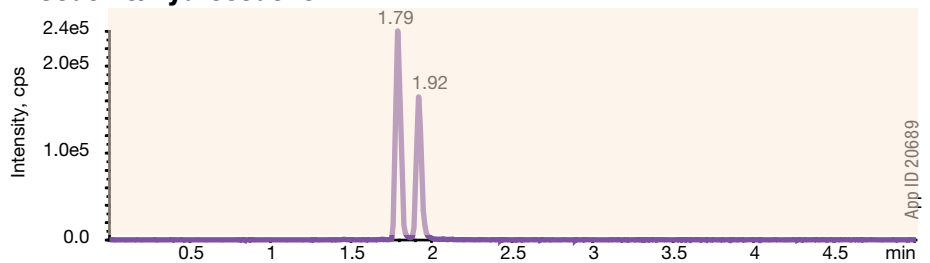
Flow Rate: 0.5 mL/min
Injection Volume: 10µL
Column Temperature: 22 °C
Detection: MS/MS (SCIEX® API 4000™)



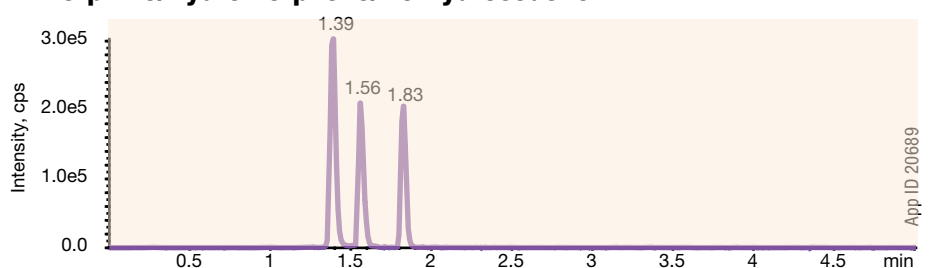
Analyte	Q1	Q3
Oxymorphone	302.1	227
Morphine	286.2	152
Hydromorphone	286.2	185
Amphetamine	136.1	91
Methamphetamine	150.1	91.2
Oxycodone	316.2	241
MDA	180.1	133
MDMA	194.1	163.2
Codeine	300.1	152.1
Naltrexone	342.2	267.1
MDEA	208.2	163.2
6-MAM	328.1	165.2
Hydrocodone	300.1	199.1
Benzoylcegonine	290.2	168.1
Norfentanyl	233.2	84.1
Tramadol	264.2	58.1
Naloxone	328.1	212
Normeperidine	234.1	160.2
Meperidine	248.2	220
Meprobamate	219.2	158.2
PCP	244.3	91
Norbuprenorphine	414.3	101.1
EDDP	278.3	234.2
Norpropoxyphene	308.2	100.1
Clonazepam	316	270.1
Flunitrazepam	314.1	268.2
α-Hydroxylprazolam	325.1	297
Carisoprodol	261.2	176.2
Oxazepam	287.1	241
Methadone	310.2	265.2
Lorazepam	321	275.1
Fentanyl	337.2	105.1
Flurazepam	388.2	315.1
Alprazolam	309.1	281
Temazepam	301.1	255.1
Propoxyphene	340.2	266.3
Nordiazepam	271.1	140
Diazepam	285.1	193.1
Midazolam	326.1	291.1
Sufentanil	387.2	238.2
Buprenorphine	468.3	396.1

Resolution of Critical Isobars

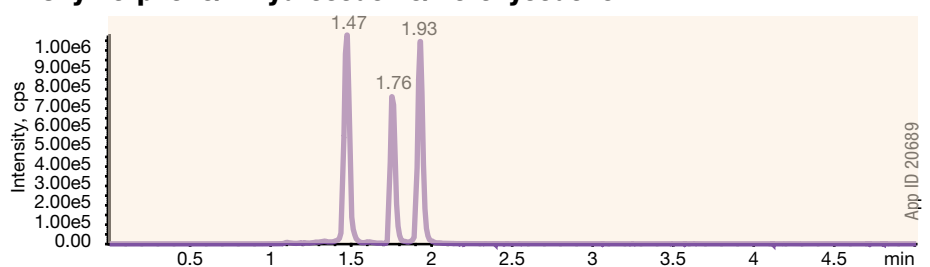
Codeine/Hydrocodone



Morphine/Hydromorphone/Norhydrocodone



Oxymorphone/Dihydrocodeine/Noroxycodone



Simplified Methods for Diverse Analytes:

Barbiturates, Opiates, Analgesics, Benzodiazepines

Detection Mode: LC-MS/MS

Stationary Phase: Kinetex® Core-Shell Biphenyl

Strata®-X PRO Solid Phase Extraction offers an improved and rugged polymeric sorbent performance combined with matrix removal technology for a revolutionary SPE solution. While the different panels of analytes are highlighted to show the ease of method development, changing the wash solvent could further optimize the method and provide even cleaner results. Using a stronger percent of organic in the wash will provide even cleaner results.

Analyte	RT (min)	% Recovery	% CV
Barbiturates			
1. Phenobarbital	1.56	91	3.4
2. Butalbital	1.76	103	2.3
3. Secobarbital	2.3	98	2.1
Opiates			
1. Morphine	2.43	68	3.8
2. Oxymorphone	2.54	80	8.6
3. Hydromorphone	2.67	75	10.5
4. Naloxone	3.09	83	3.9
5. 6-MAM	3.2	77	7
6. Codeine	3.2	70	9
7. Oxycodone	3.36	64	0.6
8. Hydrocodone	3.41	73	3.2
9. Norfentanyl	3.83	57	3.2
10. Fentanyl	4.78	79	3.9
Analgesics			
1. Meprobamate	3.73	70	9.2
2. Tramadol	3.9	71	5.1
3. Carisoprodol	4.3	66	9.6
4. Norbuprenorphine	4.3	70	8.4
5. Buprenorphine	4.7	60	1.6
Benzodiazepines			
1. Lorazepam	4.74	61	19.5
2. Oxazepam	4.86	45	14.1

96-Well Plates: Strata-X PRO, 30 mg/well

Part No.: [8E-S536-TGA](#)

Load: 400 µL Human serum/1 % Formic acid in Water (1:1)

Wash: 600 µL 5 % Methanol in Water

Dry: 2-3 minutes @ 5" Hg

Elute: 600 µL 0.1 % Formic acid in Acetonitrile/Methanol (90:10)

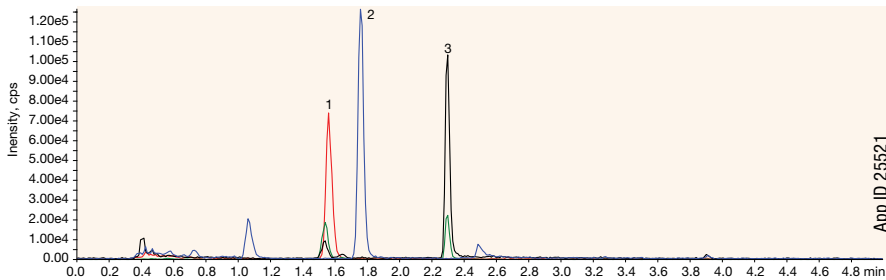
Dry Down: Under a gentle stream of Nitrogen at 40 °C to dryness

Reconstitute: 200 µL 0.1 % Formic acid in water/0.1 % Formic acid in Methanol

Simplified Methods (cont'd)

Strata[®]-X PRO displays high sensitivity with less matrix effects for multiple panels of analytes with diverse properties and reduces phospholipids in the sample. In a comparison with a traditional protein precipitation method to clean up serum, Strata-X PRO removes the phospholipids to provide a cleaner background for more sensitive results and less maintenance to the MS.

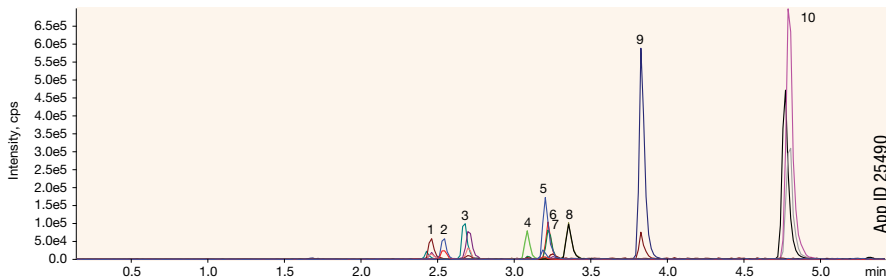
Barbiturates



App ID 25521

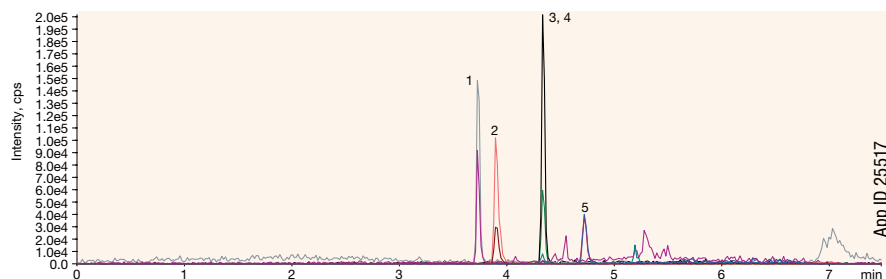
Easy single SPE method with good separation!

Opiates



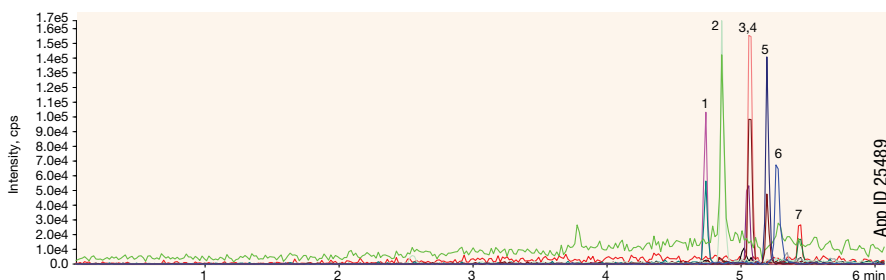
App ID 25490

Analgesics

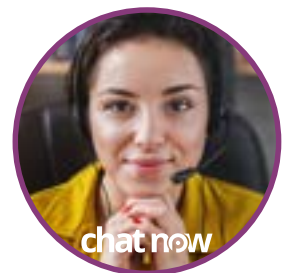


App ID 25517

Benzodiazepines



App ID 25489



For the full LC methods,

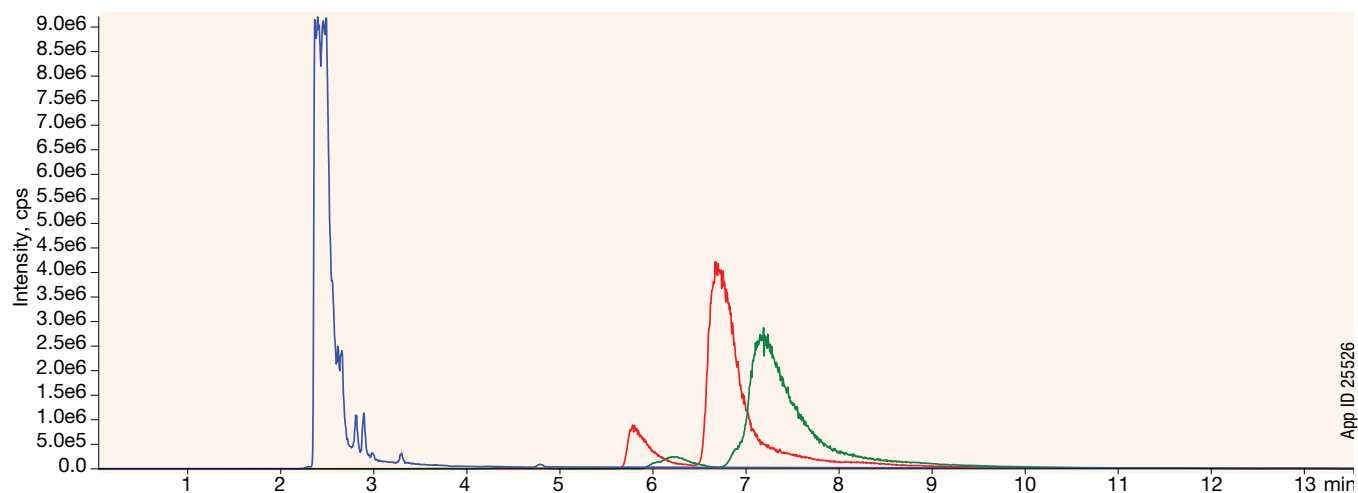
LiveChat with our technical experts with questions.
www.phenomenex.com/Chat

chat now

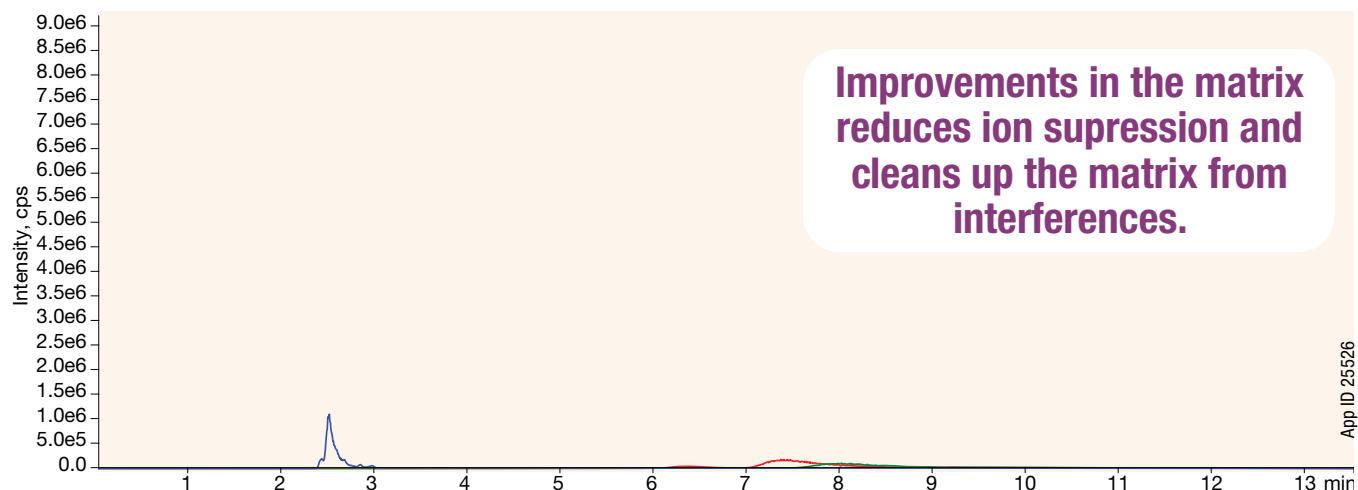
Simplified Methods (cont'd)

Comparative Phospholipid Trace of Clean-up Methods

Phospholipid Trace of Human Serum Sample After Protein Precipitation



Phospholipid Trace of Human Serum Sample After Strata®-X PRO Extraction



LC Conditions for Phospholipid Comparison

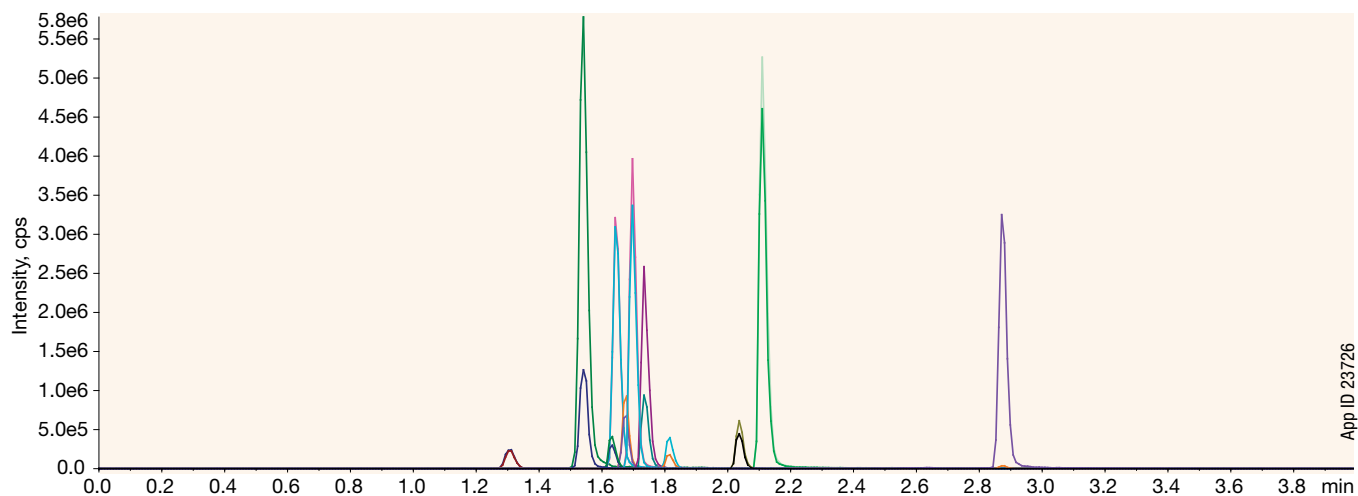
Column: Kinetex® 2.6 µm C18	Flow Rate: 0.4 mL/min
Dimensions: 50 x 2.1 mm	Injection Volume: 5 µL
Part No.: 00B-4462-AN	Temperature: 30 °C
Guard: SecurityGuard™ ULTRA Biphenyl Cartridges: AJ0-9208 SecurityGuard ULTRA Holder: AJ0-9000	Detection: MS/MS (SCIEX® Triple Quad™ 4500)
Mobile Phase: A: 0.1 % Formic acid in Water B: 0.1 % Formic acid in Methanol	Sample: Phospholipid (Retention time in minute) 1. Lyso PC (2.4), MRM transition 496.4/184.2 2. PC-1 (6.7), MRM transition 760.7/184.2 3. PC-2 (7.2), MRM transition 786.8/184.2
Gradient:	
Time (min) % B	
0 40	
0.5 95	
15.5 95	
15.51 40	
17 40	

SAMHSA 5

Detection Mode: LC-MS/MS

Stationary Phase: Kinetex® Core-Shell Biphenyl

Separation of common drugs across the SAMHSA 5 categories: amphetamines, cocaine, marijuana, opiates, and PCP.



Peak	Analyte
1	Morphine
2	Amphetamine
3	Codeine
4	Methamphetamine
5	MDA
6	6-MAM
7	MDMA
8	MDEA
9	Benzococgonine
10	PCP
11	THC-COOH

Column: Kinetex 5 μ m Biphenyl
Dimensions: 50 x 3.0 mm
Part No.: [00B-4627-Y0](#)
Guard: SecurityGuard™ ULTRA Biphenyl Cartridges: [AJ0-9208](#)
SecurityGuard ULTRA Holder: [AJ0-9000](#)
Mobile Phase: A: 0.1 % Formic acid in Water
B: 0.1 % Formic acid in Methanol
Gradient:

Time (min)	% B
0	5
1.5	98
2.5	98
2.51	5
4	5

Flow Rate: 0.6 mL/min
Injection Volume: 10 μ L
Temperature: Ambient
Detection: MS/MS (SCIEX® API 5000™)



Ordering Information

BE-HAPPY™
GUARANTEE

Your happiness is our mission. Take 45 days to try our products. If you are not happy, we'll make it right.
www.phenomenex.com/behappy

Strata®-X PRO SPE





Format	Sorbent Mass	Part Number	Unit
Tube			
	10 mg	8B-S536-AAK	1 mL (100/box)
	30 mg	8B-S536-TAK	1 mL (100/box)
	30 mg	8B-S536-TBJ	3 mL (50/box)
	60 mg	8B-S536-UBJ	3 mL (50/box)
	200 mg	8B-S536-FBJ	3 mL (50/box)
	100 mg	8B-S536-ECH	6 mL (30/box)
	200 mg	8B-S536-FCH	6 mL (30/box)
	500 mg	8B-S536-HCH	6 mL (30/box)
96-Well Plate			
	10 mg/well	8E-S536-AGA	ea
	30 mg/well	8E-S536-TGA	ea
	60 mg/well	8E-S536-UGA	ea
96-Well Microelution Plate			
	2 mg/well	8M-S536-4GA	ea




Strata-X-Drug B SPE



Format	Sorbent Mass	Part Number	Unit
Tube			
	10 mg	8B-S128-AAK	1 mL (100/box)
	30 mg	8B-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

Strata-X-Drug B Plus SPE

Format	Sorbent Mass	Part No.	Unit
96-Well Plate			
	10 mg	8E-S128-AGB-P	2 Plates/Box
	30 mg	8E-S128-TGB-P	2 Plates/Box

β-Glucuronidase Removal



Part No.	Description	Unit
β-Gone		
8B-S139-TAK	1 mL Tubes, Recombinant Enzyme	100/Box
8B-S322-DAK	1 mL Tubes, Non-Recombinant Enzyme	100/Box
8E-S139-TGA	96-Well Plate, Recombinant Enzyme	1/Box
8E-S322-DGA	96-Well Plate, Non-Recombinant Enzyme	1/Box
β-Gone Plus		
8N-S323-TUK	2 mL Centrifuge Tubes, Recombinant and Non-Recombinant Enzyme	100/Box
8E-S323-TGA	96-Well Plate Plus 30 mg/well, Recombinant/Non-Recombinant Enzyme	1/Box
8E-S323-UGA	96-Well Plate Plus 60 mg/well, Recombinant/Non-Recombinant Enzyme	1/Box

Phree™ Phospholipid Removal Products

Part No.	Description	Unit
8B-S133-TAK	Phree Phospholipid Removal 1 mL Tube	100/box
8E-S133-TGB	Phree Phospholipid Removal 96-Well Plates	2/box
Accessories		
Collection Plates (deep well, polypropylene)		
AH0-7192	96-Well Collection Plate 350 µL/well	50/pk
AH0-7193	96-Well Collection Plate 1 mL/well	50/pk
AH1-7022	96-Well Collection Plate 2 mL/well	50/pk
AH0-8636	96-Well Collection Plate, 2 mL Round/Round, 8 mm	50/pk
AH1-7025	96-Well Collection Plate, 1 mL/well Round, 7 mm	50/pk
Sealing Mats		
AH0-8597	Sealing Mats, Pierceable, 96-Square Well, Silicone	50/pk
AH0-8598	Sealing Mats, Pre-Slit, 96-Square Well, Silicone	50/pk
AH0-8631	Sealing Mats, Pierceable, 96-Round Well 7 mm, Silicone	50/pk
AH0-8632	Sealing Mats, Pre-Slit, 96-Round Well 7 mm, Silicone	50/pk
AH0-8633	Sealing Mats, Pierceable, 96-Round Well 8 mm, Silicone	50/pk
AH0-8634	Sealing Mats, Pre-Slit, 96-Round Well 8 mm, Silicone	50/pk
AH0-7362	Sealing Tape Pad	10/pk
Vacuum Manifolds		
VM12*	SPE 12-Position Vacuum Manifold Set, for tubes	ea
VM24*	SPE 24-Position Vacuum Manifold Set, for tubes	ea
AH0-8950	96-Well Plate Manifold, Universal with Vacuum Gauge	ea

Positive Pressure Manifold



Part No.	Description
AH1-7033	Presston 1000 Positive Pressure Manifold, 96-Well Plate



Phenomenex warrants the Presston 1000 Positive Pressure Manifold against defects in materials and workmanship under normal installation, use, and maintenance for a period of 12 months following delivery. Please visit www.phenomenex.com/presstonwarranty for complete warranty information.



*Manifolds include: Vacuum-tight glass chamber, vacuum gauge assembly, polypropylene lid with gasket, male and female luers and yellow end plugs, stopcock valves, collection rack assemblies, polypropylene needles, lid support legs. Waste container included with 12-positive manifold.

Ordering Information (cont'd)

3.5 µm Minibore and Analytical Columns (mm)					SecurityGuard™ ULTRA Cartridges [†]	
Phases	50 x 2.1	150 x 2.1	100 x 4.6	150 x 4.6	250 x 4.6	3/pk
XB-C18	—	—	00D-4744-E0	00F-4744-E0	—	—
PAH	00B-4764-AN	00F-4764-AN	00D-4764-E0	00F-4764-E0	00G-4764-E0	AJ0-9535
						for 2.1 mm ID
						AJ0-8768
						for 4.6 mm ID

5 µm Minibore Columns (mm)					SecurityGuard ULTRA Cartridges [†]	
Phases	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	3/pk	
EVO C18	00A-4633-AN	00B-4633-AN	00D-4633-AN	00F-4633-AN	AJ0-9298	
F5	—	00B-4724-AN	00D-4724-AN	00F-4724-AN	AJ0-9322	
Biphenyl	00A-4627-AN	00B-4627-AN	00D-4627-AN	—	AJ0-9209	
XB-C18	00A-4605-AN	00B-4605-AN	00D-4605-AN	—	AJ0-8782	
C18	00A-4601-AN	00B-4601-AN	00D-4601-AN	00F-4601-AN	AJ0-8782	
C8	—	00B-4608-AN	00D-4608-AN	—	AJ0-8784	
Phenyl-Hexyl	—	00B-4603-AN	—	—	AJ0-8788	
HILIC	—	00B-4606-AN	—	—	AJ0-8786	
						for 2.1 mm ID



5 µm MidBore™ Columns (mm)					SecurityGuard ULTRA Cartridges [†]	
Phases	30 x 3.0	50 x 3.0	100 x 3.0	150 x 3.0	3/pk	
EVO C18	00A-4633-Y0	00B-4633-Y0	00D-4633-Y0	00F-4633-Y0	AJ0-9297	
F5	—	—	00D-4724-Y0	00F-4724-Y0	AJ0-9321	
Biphenyl	—	00B-4627-Y0	00D-4627-Y0	00F-4627-Y0	AJ0-9208	
XB-C18	—	00B-4605-Y0	00D-4605-Y0	00F-4605-Y0	AJ0-8775	
C18	00A-4601-Y0	00B-4601-Y0	00D-4601-Y0	00F-4601-Y0	AJ0-8775	
C8	—	00B-4608-Y0	00D-4608-Y0	—	AJ0-8777	
Phenyl-Hexyl	—	00B-4603-Y0	00D-4603-Y0	—	AJ0-8781	
						for 3.0 mm ID

5 µm Analytical Columns (mm)					SecurityGuard ULTRA Cartridges [†]	
Phases	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	3/pk	
EVO C18	00B-4633-E0	00D-4633-E0	00F-4633-E0	00G-4633-E0	AJ0-9296	
F5	00B-4724-E0	00D-4724-E0	00F-4724-E0	00G-4724-E0	AJ0-9320	
Biphenyl	00B-4627-E0	00D-4627-E0	00F-4627-E0	00G-4627-E0	AJ0-9207	
XB-C18	00B-4605-E0	00D-4605-E0	00F-4605-E0	00G-4605-E0	AJ0-8768	
C18	00B-4601-E0	00D-4601-E0	00F-4601-E0	00G-4601-E0	AJ0-8768	
C8	00B-4608-E0	00D-4608-E0	00F-4608-E0	00G-4608-E0	AJ0-8770	
Phenyl-Hexyl	00B-4603-E0	00D-4603-E0	00F-4603-E0	00G-4603-E0	AJ0-8774	
HILIC	—	—	00F-4606-E0	00G-4606-E0	AJ0-8772	
						for 4.6 mm ID

5 µm Semi-Preparative Columns (mm)					SecurityGuard SemiPrep Cartridges ^{***}
Phases	100 x 10	150 x 10	250 x 10	10 x 10 /3pk	
EVO C18	—	00F-4633-N0	00G-4633-N0	AJ0-9306	
F5	—	—	00G-4724-N0	AJ0-9323	
C18	00D-4601-N0	00F-4601-N0	00G-4601-N0	AJ0-9278	
Biphenyl	—	00F-4627-N0	00G-4627-N0	AJ0-9280	
XB-C18	—	00F-4605-N0	00G-4605-N0	AJ0-9278	
					for 9-16 mm ID

5 µm Axia™ Packed Preparative Columns (mm)					SecurityGuard PREP Cartridges ^{**}
Phases	50 x 21.2	100 x 21.2	150 x 21.2	250 x 21.2	15 x 21.2 /ea
EVO C18	00B-4633-P0-AX	00D-4633-P0-AX	00F-4633-P0-AX	00G-4633-P0-AX	AJ0-9304
F5	—	—	00F-4724-P0-AX	00G-4724-P0-AX	AJ0-9324
Biphenyl	00B-4627-P0-AX	00D-4627-P0-AX	00F-4627-P0-AX	00G-4627-P0-AX	AJ0-9272
XB-C18	00B-4605-P0-AX	00D-4605-P0-AX	00F-4605-P0-AX	00G-4605-P0-AX	AJ0-9145
C18	00B-4601-P0-AX	00D-4601-P0-AX	00F-4601-P0-AX	00G-4601-P0-AX	AJ0-9145
C8	00B-4608-P0-AX	00D-4608-P0-AX	00F-4608-P0-AX	00G-4608-P0-AX	AJ0-9205
Phenyl-Hexyl	00B-4603-P0-AX	00D-4603-P0-AX	00F-4603-P0-AX	00G-4603-P0-AX	AJ0-9147
HILIC	—	00D-4606-P0-AX	00F-4606-P0-AX	00G-4606-P0-AX	AJ0-9277
					for 18-29 mm ID

5 µm Axia Packed Preparative Columns (mm)					SecurityGuard PREP Cartridges ^{**}
Phases	50 x 30	100 x 30	150 x 30	250 x 30	15 x 30 /ea
EVO C18	00B-4633-U0-AX	00D-4633-U0-AX	00F-4633-U0-AX	00G-4633-U0-AX	AJ0-9305
F5	00B-4724-U0-AX	00D-4724-U0-AX	00F-4724-U0-AX	—	AJ0-9325
Biphenyl	—	—	00F-4627-U0-AX	00G-4627-U0-AX	AJ0-9273
XB-C18	00B-4605-U0-AX	00D-4605-U0-AX	00F-4605-U0-AX	00G-4605-U0-AX	AJ0-9204
C18	00B-4601-U0-AX	00D-4601-U0-AX	00F-4601-U0-AX	00G-4601-U0-AX	AJ0-9204
C8	00B-4608-U0-AX	00D-4608-U0-AX	00F-4608-U0-AX	00G-4608-U0-AX	AJ0-9217
Phenyl-Hexyl	—	—	00F-4603-U0-AX	00G-4603-U0-AX	AJ0-9216
HILIC	—	—	00D-4606-U0-AX	—	—
					for 30-49 mm ID

[†] SecurityGuard ULTRA Cartridges require holder, Part No.: [AJ0-9000](#)

^{*} PREP SecurityGuard Cartridges require holder, Part No.: [AJ0-8223](#)

^{**} PREP SecurityGuard Cartridges require holder, Part No.: [AJ0-8277](#)

^{***} SemiPrep SecurityGuard Cartridges require holder, Part No.: [AJ0-9281](#)

Ordering Information (cont'd)

2.6 µm Micro LC Columns (mm)						
Phases	30 x 0.3	50 x 0.3	100 x 0.3	150 x 0.3	50 x 0.5	150 x 0.5
Biphenyl	—	00B-4622-AC	—	00F-4622-AC	00B-4622-AF	—
C18	00A-4462-AC	00B-4462-AC	—	00F-4462-AC	00B-4462-AF	—
EVO C18	—	00B-4725-AC	—	00F-4725-AC	00B-4725-AF	—
F5	—	00B-4723-AC	00D-4723-AC	00F-4723-AC	00B-4723-AF	—
XB-C18	00A-4496-AC	00B-4496-AC	00D-4496-AC	00F-4496-AC	00B-4496-AF	00F-4496-AF

2.6 µm Minibore Columns (mm)						SecurityGuard ULTRA Cartridges [‡]
Phases	30 x 2.1	50 x 2.1	75 x 2.1	100 x 2.1	150 x 2.1	3/pk
EVO C18	00A-4725-AN	00B-4725-AN	—	00D-4725-AN	00F-4725-AN	AJO-9298
PS C18	00A-4780-AN	00B-4780-AN	—	00D-4780-AN	00F-4780-AN	AJO-8951
Polar C18	00A-4759-AN	00B-4759-AN	—	00D-4759-AN	00F-4759-AN	AJO-9532
F5	00A-4723-AN	00B-4723-AN	—	00D-4723-AN	00F-4723-AN	AJO-9322
Biphenyl	00A-4622-AN	00B-4622-AN	—	00D-4622-AN	00F-4622-AN	AJO-9209
XB-C18	00A-4496-AN	00B-4496-AN	00C-4496-AN	00D-4496-AN	00F-4496-AN	AJO-8782
C18	00A-4462-AN	00B-4462-AN	00C-4462-AN	00D-4462-AN	00F-4462-AN	AJO-8782
C8	00A-4497-AN	00B-4497-AN	00C-4497-AN	00D-4497-AN	00F-4497-AN	AJO-8784
HILIC	00A-4461-AN	00B-4461-AN	00C-4461-AN	00D-4461-AN	00F-4461-AN	AJO-8786
Phenyl-Hexyl	00A-4495-AN	00B-4495-AN	00C-4495-AN	00D-4495-AN	00F-4495-AN	AJO-8788

for 2.1 mm ID

2.6 µm MidBore™ Columns (mm)						SecurityGuard ULTRA Cartridges [‡]
Phases	30 x 3.0	50 x 3.0	75 x 3.0	100 x 3.0	150 x 3.0	3/pk
EVO C18	00A-4725-YO	00B-4725-YO	—	00D-4725-YO	00F-4725-YO	AJO-9297
PS C18	00B-4780-YO	00D-4780-YO	—	00D-4780-YO	00F-4780-YO	AJO-8950
Polar C18	—	00B-4759-YO	—	00D-4759-YO	00F-4759-YO	AJO-9531
F5	—	00B-4723-YO	—	00D-4723-YO	00F-4723-YO	AJO-9321
Biphenyl	—	00B-4622-YO	—	00D-4622-YO	00F-4622-YO	AJO-9208
XB-C18	00A-4496-YO	00B-4496-YO	00C-4496-YO	00D-4496-YO	00F-4496-YO	AJO-8775
C18	00A-4462-YO	00B-4462-YO	00C-4462-YO	00D-4462-YO	00F-4462-YO	AJO-8775
C8	00A-4497-YO	00B-4497-YO	00C-4497-YO	00D-4497-YO	00F-4497-YO	AJO-8777
HILIC	00A-4461-YO	—	—	00D-4461-YO	00F-4461-YO	AJO-8779
Phenyl-Hexyl	—	00B-4495-YO	—	00D-4495-YO	00F-4495-YO	AJO-8781

for 3.0 mm ID

2.6 µm Analytical Columns (mm)							SecurityGuard ULTRA Cartridges [‡]
Phases	30 x 4.6	50 x 4.6	75 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	3/pk
EVO C18	00A-4725-E0	00B-4725-E0	—	00D-4725-E0	00F-4725-E0	00G-4725-E0	AJO-9296
PS C18	—	00B-4780-E0	—	00D-4780-E0	00F-4780-E0	00G-4780-E0	AJO-8949
Polar C18	00A-4759-E0	00B-4759-E0	—	00D-4759-E0	00F-4759-E0	—	AJO-9532
F5	00A-4723-E0	00B-4723-E0	—	00D-4723-E0	00F-4723-E0	—	AJO-9320
Biphenyl	—	00B-4622-E0	—	00D-4622-E0	00F-4622-E0	—	AJO-9207
XB-C18	—	00B-4496-E0	00C-4496-E0	00D-4496-E0	00F-4496-E0	—	AJO-8768
C18	00A-4462-E0	00B-4462-E0	00C-4462-E0	00D-4462-E0	00F-4462-E0	—	AJO-8768
C8	—	00B-4497-E0	00C-4497-E0	00D-4497-E0	00F-4497-E0	—	AJO-8770
HILIC	—	00B-4461-E0	00C-4461-E0	00D-4461-E0	00F-4461-E0	—	AJO-8772
Phenyl-Hexyl	—	00B-4495-E0	00C-4495-E0	00D-4495-E0	00F-4495-E0	—	AJO-8774

for 4.6 mm ID

1.7 µm Minibore Columns (mm)						SecurityGuard™ ULTRA Cartridges [‡]
Phases	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	3/pk	
EVO C18	—	00B-4726-AN	00D-4726-AN	00F-4726-AN	AJO-9298	
F5	—	00B-4722-AN	00D-4722-AN	00F-4722-AN	AJO-9322	
Biphenyl	00A-4628-AN	00B-4628-AN	00D-4628-AN	00F-4628-AN	AJO-9209	
XB-C18	00A-4498-AN	00B-4498-AN	00D-4498-AN	00F-4498-AN	AJO-8782	
C18	00A-4475-AN	00B-4475-AN	00D-4475-AN	00F-4475-AN	AJO-8782	
C8	00A-4499-AN	00B-4499-AN	00D-4499-AN	00F-4499-AN	AJO-8784	
HILIC	00A-4474-AN	00B-4474-AN	00D-4474-AN	—	AJO-8786	
Phenyl-Hexyl	—	00B-4500-AN	00D-4500-AN	00F-4500-AN	AJO-8788	

for 2.1 mm ID

1.7 µm MidBore Columns (mm)					SecurityGuard ULTRA Cartridges [‡]
Phases	30 x 3.0	50 x 3.0	100 x 3.0	3/pk	
XB-C18	00A-4498-YO	00B-4498-YO	00D-4498-YO	AJO-8775	
C18	—	00B-4475-YO	00D-4475-YO	AJO-8775	
C8	00A-4499-YO	00B-4499-YO	00D-4499-YO	AJO-8777	
Phenyl	—	—	00D-4500-YO	AJO-8781	
HILIC	—	00B-4474-YO	—	AJO-8779	

for 3.0 mm ID

2.6 µm Microbore Columns (mm)			
Phases	50 x 1.0	100 x 1.0	150 x 1.0
C18	00B-4462-A0	—	—
XB-C18	00B-4496-A0	00D-4496-A0	00F-4496-A0

1.7 µm Microbore Columns (mm)			
Phases	50 x 1.0	100 x 1.0	150 x 1.0
EVO C18	00B-4726-A0	00D-4726-A0	00F-4726-A0
Biphenyl	00B-4628-A0	00D-4628-A0	—

1.3 µm Minibore Columns (mm)		
Phases	30 x 2.1	50 x 2.1
C18	00A-4515-AN	00B-4515-AN

[‡] SecurityGuard ULTRA Cartridges require holder, Part No.: [AJO-9000](#)

Pain Management Drugs



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