



SiliaPrepXTM

Polymeric SPE Cartridges
and Well Plates



SiliaPrepX™ Polymeric SPE Cartridges and Well Plates

Using SiliaPrepX Polymeric SPE Cartridges and Well Plates guarantees the following benefits:

- High quality products covering a broad spectrum of applications for a wide range of complexe matrices.
- Exceptional lot-to-lot reproducibility.
- High recovery and yield.
- Very good separation and flow characteristics (*high loadability and great elution properties allowing low solvent consumption and economical analysis*).
- No contamination from the matrix (*clean extract reducing the ion suppression and increasing the selectivity for LC-MS/MS applications*).



SiliaPrepX Polymeric; An Addition to Our Silica-Based SPE Cartridges

At SiliCycle, as leaders in the industry, we are committed to offer the best and most diversified portfolio for analytical, chromatography and organic chemistry. Although we are primarily renowned for *UltraPure* silica gels, we have created the SiliaPrepX family of polymeric SPE cartridges and well plates to cover the whole spectrum of your solid-phase extraction needs. This new family of polymeric sorbents includes all the phases currently used in the field of sample purification, namely Hydrophilic-Lipophilic Balance (*HLB*), Divinylbenzene (*DVB*), Strong Cation Exchanger (*SCX*), Strong Anion Exchanger (*SAX*), Weak Cation Exchanger (*WCX*) and Weak Anion Exchanger (*WAX*). This complete range of sorbents allows the treatment of the most common matrices, such as human and animal biological fluids, waste waters, petrochemical residues, toxicological residues, food and beverage.

Our new SiliaPrepX polymeric products are made using state of the art technology that provides the highest quality and lot-to-lot reproducibility. In addition, we conduct strict quality controls and analysis during the manufacturing process to remove from the assembly line any impurity or defect that could alter our products.

Plastic Device Specifications

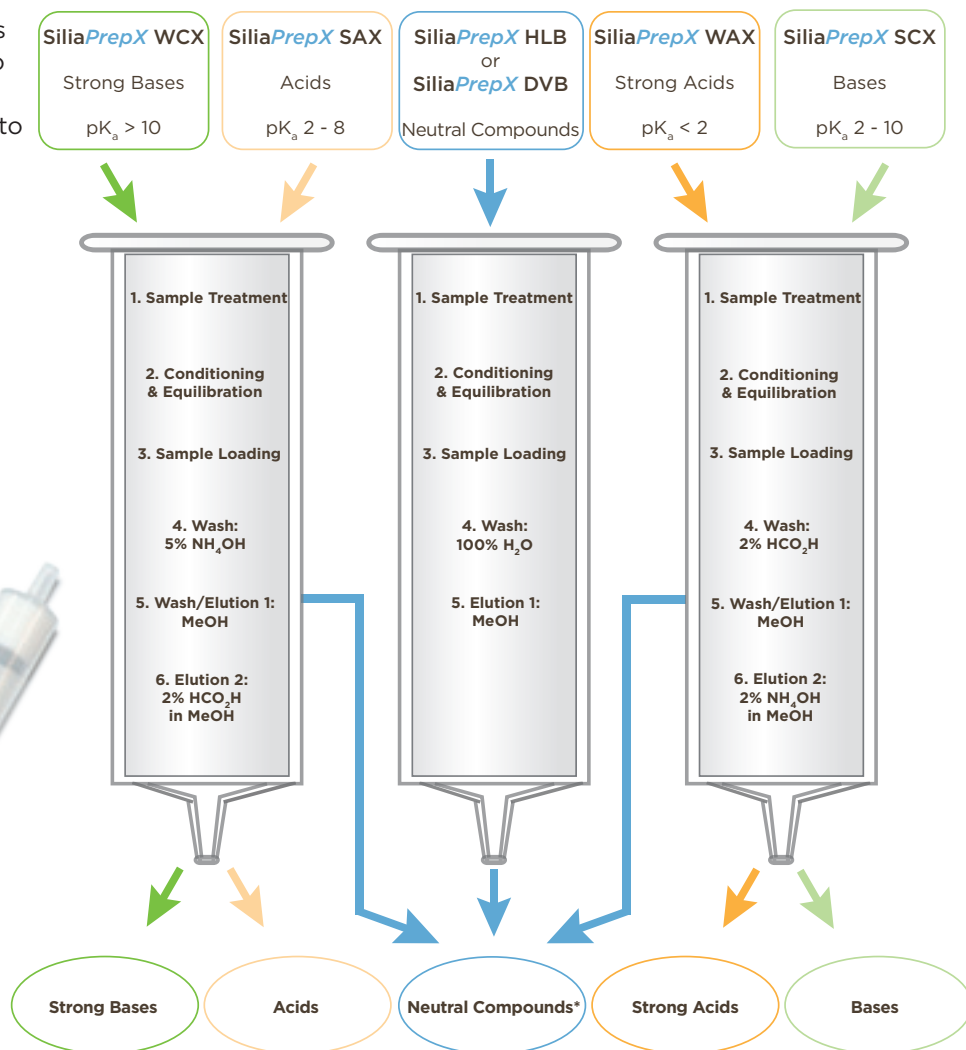
Standard SiliaPrepX cartridges are made with flanged polypropylene (*PP*) tubes and 20 µm polyethylene (*PE*) frits. Other plastic materials (*Teflon®*, *HDPE*, etc.), frit porosity (10 µm), and/or cartridge rim's (*flangeless*) are also available on a custom order basis.



Determination of the Optimal SiliaPrepX Polymeric Phase by a Simple & Logical Method

Follow the simple and logical steps outlined in the flow chart beside to determine the optimal SiliaPrepX polymeric phase to use, as well as to achieve high recovery and clean extract.

- Determine the classification of the analyte (*neutral, acidic or basic compound*)
- Determine the pK_a of the analyte
- Select the SiliaPrepX phase
- Apply the indicated treatment
- Determine recovery by LC analysis



*Polar compounds such as organic acids and bases can also be eluted after the Wash/Elution 1.

Product Selection Guide by Manufacturer

Product Selection Guide by Manufacturers					
SiliCycle®	Waters®	Phenomenex®	Agilent®	Supelco®	Macherey-Nagel®
SiliaPrepX HLB	Oasis® HLB	Strata™-X	Plexa® or Nexus®	Supel™ Select HLB	Chromabond® HR-X
SiliaPrepX DVB	Oasis® HLB	Strata™-XL	Plexa® or SimplicQ® PS-DVB	Supel™ Select HLB	Chromabond® HR-X
SiliaPrepX SCX	Oasis® MCX	Strata™-X-C	Plexa® PCX or SimplicQ® SCX	Supel™ Select SCX	Chromabond® HR-XC
SiliaPrepX SAX	Oasis® MAX	Strata™-X-A	Plexa® PAX or SimplicQ® SAX	Supel™ Select SAX	Chromabond® HR-XA
SiliaPrepX WCX	Oasis® WCX	Strata™-X-CW	Nexus® WCX or SimplicQ® WCX	n/a	Chromabond® HR-XCW
SiliaPrepX WAX	Oasis® WAX	Strata™-X-AW	SimplicQ® WAX	n/a	Chromabond® HR-XAW

SiliaPrepX HLB Phase

Description

SiliaPrepX HLB is a wettable copolymer presenting a Hydrophilic-Lipophilic Balance allowing a strong retention of neutral, acidic and basic compounds and a high stability in organic solvents.

Typical Applications

- Drugs and metabolites in biological fluids
- API from tablets, creams, in waste water & drinking water
- Environmental analysis: trace of PAHs, pesticides, herbicides, phenols and PCB in water
- Antibiotics and pesticides in food & beverage

- Particle Size: 40 μm
- Pore Size: 110 $\text{\AA}$
- Surface Area: 850 m^2/g
- pH Stability: 0 to 14

SiliaPrepX HLB General Extraction Procedure

Conditioning step	1 x Column volume of MeOH
Equilibration step	1 x Column volume of H_2O
Loading step	Diluted sample
Washing step	1 x Column volume of 5 - 60% MeOH
Elution step	2 x 500 μL of MeOH

Note: This procedure is a convenient starting point for method development (*format 1 mL/30 mg*). Further optimization may be required to tailor the method to your application needs.

SiliaPrepX DVB Phase

Description

SiliaPrepX DVB is a polystyrene-divinylbenzene copolymer presenting a high hydrophobicity used as a reversed-phase for the extraction of neutral, acidic and basic compounds in viscous matrices or for post synthesis clean-up.

Typical Applications

- Drugs & metabolites in biological fluids
- API from tablets, creams, in waste water & drinking water
- Environmental analysis: trace of PAHs, pesticides, herbicides, phenols & PCBs in water

- Particle Size: 85 μm
- Pore Size: 60 $\text{\AA}$
- Surface Area: 950 m^2/g
- pH Stability: 0 to 14

SiliaPrepX DVB General Extraction Procedure

Conditioning step	1 x Column volume of MeOH
Equilibration step	1 x Column volume of H_2O
Loading step	Diluted sample
Washing step	1 x Column volume of 5 - 60% MeOH
Elution step	2 x 500 μL of MeOH

Note: This procedure is a convenient starting point for method development (*format 1 mL/30 mg*). Further optimization may be required to tailor the method to your application needs.

SiliaPrepX HLB and DVB Polymeric Formats

Formats	Qty/Box	SiliaPrepX HLB	SiliaPrepX DVB
SiliaPrepX Polymeric SPE Cartridges			
1 mL/30 mg	100	SPE-P0002-01AA	SPE-P0001-01AA
3 mL/60 mg	50	SPE-P0002-03BB	SPE-P0001-03BB
6 mL/100 mg	30	SPE-P0002-06C	SPE-P0001-06C
6 mL/200 mg	30	SPE-P0002-06G	SPE-P0001-06G
6 mL/500 mg	30	SPE-P0002-06P	SPE-P0001-06P
Custom formats available on request			
SiliaPrepX Polymeric 96-Well Plates			
2 mL/10 mg	1	96W-P0002-1A	96W-P0001-1A
2 mL/30 mg	1	96W-P0002-AA	96W-P0001-AA



SiliaPrepX SCX Phase

Description

SiliaPrepX SCX is a polystyrene-divinylbenzene copolymer functionalized by a strong cation exchanger presenting a high selectivity for bases (pK_a 2 - 10). It is highly stable in organic solvents.

Typical Applications

- Basic drugs from biological fluids & tissues
- Pesticides, herbicides, fungicides & melamine from food & beverage

- Particle Size: 85 μ m
- Pore Size: 60 Å
- Surface Area: 800 m²/g
- pH Stability: 0 to 14
- Ionic Capacity: 0.85 meq/g

SiliaPrepX SCX General Extraction Procedure

Conditioning step	1 x Column volume of MeOH
Equilibration step	1 x Column volume of H ₂ O
Loading step	Spiked and acidified sample
Washing step 1	1 x Column volume of 2% HCO ₂ H in H ₂ O
Washing step 2	1 x Column volume of MeOH
Elution step	2 x 500 μ L of 2% NH ₄ OH in MeOH

Note: This procedure is a convenient starting point for method development (*format 1 mL/30 mg*). Further optimization may be required to tailor the method to your application needs.

SiliaPrepX SAX Phase

Description

SiliaPrepX SAX is a polystyrene-divinylbenzene copolymer functionalized by a strong anion exchanger presenting a high selectivity for acids (pK_a 2 - 8). It is highly stable in organic solvents.

Typical Applications

- Acidic compounds & metabolites from biological fluids & tissues
- Food additives & contaminants
- Phenolic acids
- Acidic herbicides

- Particle Size: 85 μ m
- Pore Size: 60 Å
- Surface Area: 900 m²/g
- pH Stability: 0 to 14
- Ionic Capacity: 0.25 meq/g

SiliaPrepX SAX General Extraction Procedure

Conditioning step	1 x Column volume of MeOH
Equilibration step	1 x Column volume of H ₂ O
Loading step	Spiked and acidified sample
Washing step 1	1 x Column volume of 2% NH ₄ OH in H ₂ O
Washing step 2	1 x Column volume of MeOH
Elution step	2 x 500 μ L of 2% HCO ₂ H in MeOH

Note: This procedure is a convenient starting point for method development (*format 1 mL/30 mg*). Further optimization may be required to tailor the method to your application needs.

SiliaPrepX Strong Exchangers Polymeric Formats

Formats	Qty/Box	SiliaPrepX SCX	SiliaPrepX SAX
SiliaPrepX Polymeric SPE Cartridges			
1 mL/30 mg	100	SPE-P0005-01AA	SPE-P0010-01AA
3 mL/60 mg	50	SPE-P0005-03BB	SPE-P0010-03BB
6 mL/100 mg	30	SPE-P0005-06C	SPE-P0010-06C
6 mL/200 mg	30	SPE-P0005-06G	SPE-P0010-06G
6 mL/500 mg	30	SPE-P0005-06P	SPE-P0010-06P
Custom formats available on request			
SiliaPrepX Polymeric 96-Well Plates			
2 mL/10 mg	1	96W-P0005-1A	96W-P0010-1A
2 mL/30 mg	1	96W-P0005-AA	96W-P0010-AA

SiliaPrepX WCX Phase

Description

SiliaPrepX WCX is a polystyrene-divinylbenzene copolymer functionalized by a weak cation exchanger used to catch and release strong basic compounds ($pK_a > 7.0$). It is highly stable in organic solvents.

Typical Applications

- Strong basic compounds from biological fluids & tissues
- Streptomycin from food

- Particle Size: 85 μm
- Pore Size: 60 $\text{\AA}$
- Surface Area: 800 m^2/g
- pH Stability: 0 to 14
- Ionic Capacity: 0.70 meq/g

SiliaPrepX WCX General Extraction Procedure

Conditioning step	1 x Column volume of MeOH
Equilibration step	1 x Column volume of H_2O
Loading step	Spiked and acidified sample
Washing step 1	1 x Column volume of 2% NH_4OH in H_2O
Washing step 2	1 x Column volume of MeOH
Elution step	2 x 500 μL of 2% HCO_2H in MeOH

Note: This procedure is a convenient starting point for method development (format 1 mL/30 mg). Further optimization may be required to tailor the method to your application needs.

SiliaPrepX WAX Phase

Description

SiliaPrepX WAX is a polystyrene-divinylbenzene copolymer functionalized by a weak anion exchanger used to catch and release strong acidic compounds ($pK_a < 2$). It is highly stable in organic solvents.

Typical Applications

- Strong acidic compounds & metabolites from biological fluids & tissues
- Sulfonates & perfluorinated surfactants

- Particle Size: 85 μm
- Pore Size: 60 $\text{\AA}$
- Surface Area: 800 m^2/g
- pH Stability: 0 to 14
- Ionic Capacity: 0.50 meq/g

SiliaPrepX WAX General Extraction Procedure

Conditioning step	1 x Column volume of MeOH
Equilibration step	1 x Column volume of H_2O
Loading step	Spiked and acidified sample
Washing step 1	1 x Column volume of 2% HCO_2H in H_2O
Washing step 2	1 x Column volume of MeOH
Elution step	2 x 500 μL of 2% NH_4OH in MeOH

Note: This procedure is a convenient starting point for method development (format 1 mL/30 mg). Further optimization may be required to tailor the method to your application needs.

SiliaPrepX Weak Exchangers Polymeric Formats

Formats	Qty/Box	SiliaPrepX WCX	SiliaPrepX WAX
SiliaPrepX Polymeric SPE Cartridges			
1 mL/30 mg	100	SPE-P0015-01AA	SPE-P0020-01AA
3 mL/60 mg	50	SPE-P0015-03BB	SPE-P0020-03BB
6 mL/100 mg	30	SPE-P0015-06C	SPE-P0020-06C
6 mL/200 mg	30	SPE-P0015-06G	SPE-P0020-06G
6 mL/500 mg	30	SPE-P0015-06P	SPE-P0020-06P

Custom formats available on request

SiliaPrepX Polymeric 96-Well Plates

2 mL/10 mg	1	96W-P0015-1A	96W-P0020-1A
2 mL/30 mg	1	96W-P0015-AA	96W-P0020-AA



Marbofloxacin & Sarafloxacin in Salmon

Marbofloxacin and Sarafloxacin are fluoroquinolone antibiotics used in veterinary medicine for infection treatment of skin and respiratory system. The excessive use of fluoroquinolones in food from animals has led to fluoroquinolone-resistant *Salmonella* causing several human health diseases. In 1998, the World Health Organization (WHO) has encouraged the promotion of prudent use of quinolones in veterinary medicine in order to minimize the emergence of antimicrobial resistance.

SiliaPrepX SCX 3 mL/60 mg

SiliCycle PN: SPE-P0005-03BB

Sample Preparation

- Add 2 g of salmon and 15 mL of 3% H₃PO₄ aqueous solution in a 50 mL tube
- Shake the tube in a horizontal position for 15 min
- Add 5 mL of hexane and vortex for 2 min
- Centrifuge at 3,000 rpm for 5 min
- Recupere the aqueous phase from the gelled organic phase by filtration

Conditioning Step

- 3 mL of MeOH, 3 mL of HCl 1M and 3 mL of H₂O

Loading Step

- Pass 3 mL of the filtered sample through the cartridge

Washing Step

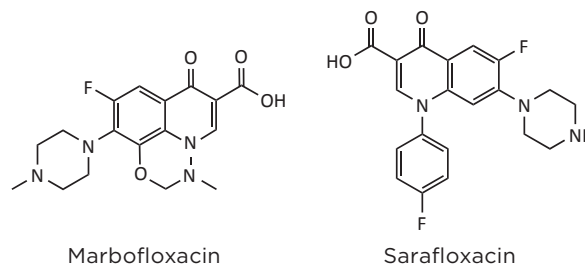
- 2 mL of HCl 2M
- 1 mL of MeOH

Elution Step

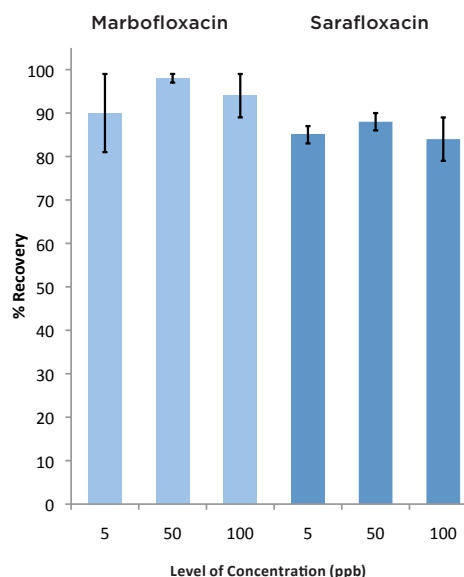
- 3 mL of 10% NH₄OH in MeOH

Reconstitution Step

- Evaporate under a stream of nitrogen (20 min at 40°C)
- Reconstitute with 1 mL of (20/80) MeOH/H₂O (v/v)



Recovery Results (*n* = 3)



Chromatographic Conditions:

Column: SiliaChrom dt C18, 3 μm
 Column Size: 3.0 x 30 mm
 SiliCycle PN: H141803E-H030
 Mobile Phase: MPA: 1 mM ammonium formate in (10/90) MeOH/H₂O, 0.1% formic acid (v/v)
 MPB: 1 mM ammonium formate in (90/10) MeOH/H₂O, 0.1% formic acid (v/v)
 Temperature: 23°C
 Flow Rate: 0.800 mL/min
 Detector: Sciex API 3000
 Turbo Ion Spray Heater Gas Flow: 8,000 cc/min
 Turbo Ion Spray Heater Temperature: 400°C, ESI⁺
 MRM Transition: Marbofloxacin 363.1 → 320.2
 Sarafloxacin 386.3 → 368.3
 Injection Volume: 5 μL

Gradient		
Time (min)	MPA (%)	MPB (%)
0	90	10
0.50	90	10
0.51	65	35
1.50	65	35
1.51	0	100
2.25	0	100
2.26	90	10
4.00	90	10



Acrylamide Determination in Fried Potato Chips

Acrylamide is a chemical contaminant produced during the cooking step at high temperature of foods containing high levels of carbohydrate and low levels of protein. High levels of acrylamide have been detected in french fries and potato chips as well as other fried foods. Acrylamide is suspected to be a cancer agent. Health Canada is currently collecting information on the properties and prevalence of this substance in order to make their assessment. Other governmental health organizations have added acrylamide to the list of potentially cancerogenic substances.

SiliaPrepX HLB 6 mL/200 mg
SiliCycle PN: SPE-P0002-06G

SiliaPrepX SCX 3 mL/60 mg
SiliCycle PN: SPE-P0005-03BB

Sample Preparation

- First extraction:
 - In a PTFE tube, add 1 g of potato chips, 8 mL of 4M NaCl aqueous solution and vortex 1 min
 - Incubate 30 min at 60°C (*vortex 10 sec each 10 min*)
 - Centrifuge for 10 min at 4,500 rpm and collect the supernatant
- Second extraction:
 - repeat previous 3 steps with same potato chips
- Add 1 mL of Cirraz 1^a solution and 1 mL of Cirraz 2^b solution
- Vortex 1 min and centrifuge at 4,500 rpm for 5 min
 - ^aCirraz 1 solution: 15 g K₃[Fe(CN)₆] in 100 mL H₂O
 - ^bCirraz 2 solution: 30 g Zn(O₂CCH₃)₂ in 100 mL H₂O

Step 1: SiliaPrepX HLB 6 mL/200 mg

Conditioning Step

- 3 mL of MeOH and 3 mL of H₂O

Loading Step

- Pass 1.5 mL of the treated sample through the cartridge

Washing Step

- 1.5 mL H₂O

Elution Step

- 3 mL MeOH

Step 2: SiliaPrepX SCX 3 mL/60 mg

Conditioning Step

- 3 mL of MeOH

Loading Step

- Pass the treated sample from step 1 through the cartridge by gravity and collect this fraction

Washing Step

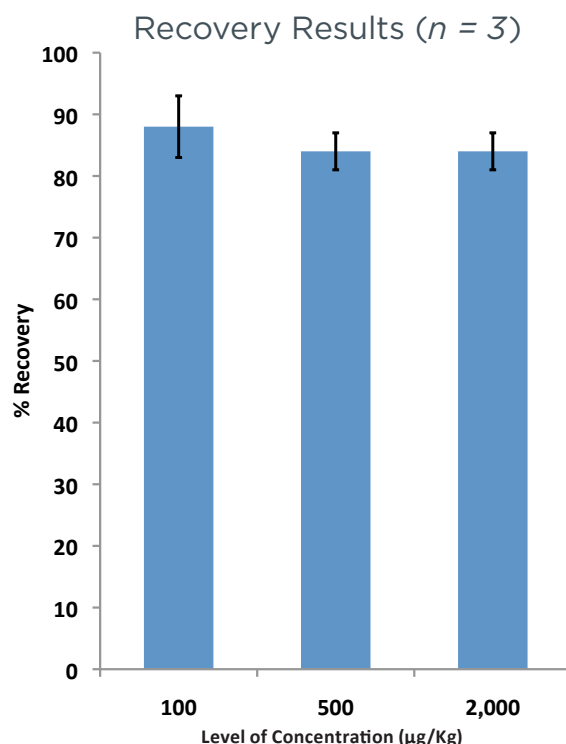
- 1 mL of MeOH and mix the collected fraction

Reconstitution Step

- Evaporate to dryness with a rotary evaporator at 45°C
- Reconstitute with 2 mL of (5/95) MeOH/H₂O (v/v)

Chromatographic Conditions:

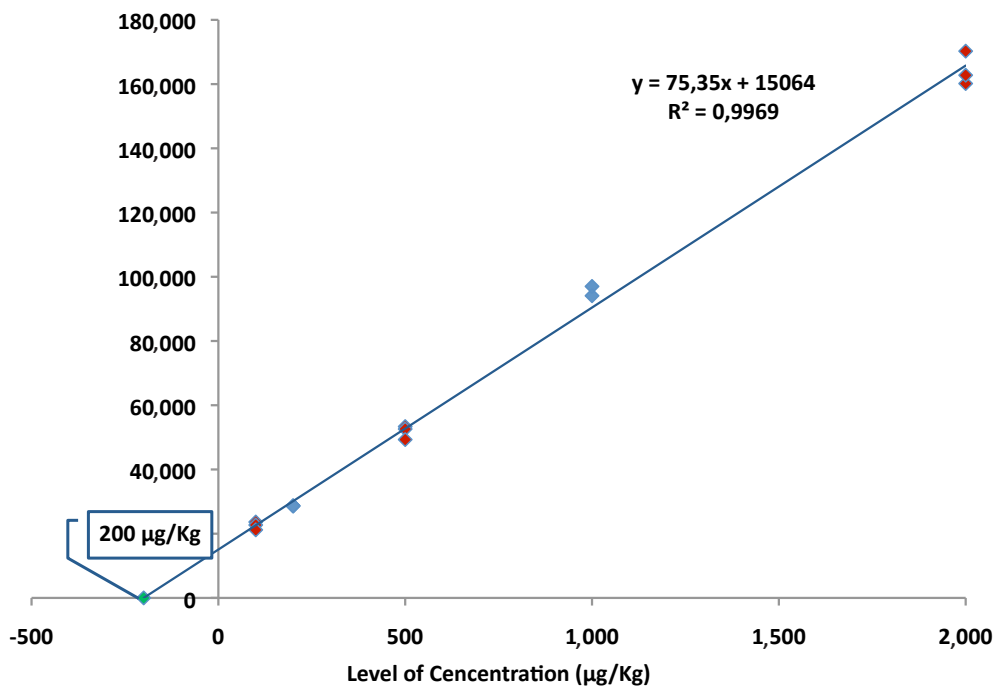
Column: SiliaChrom dt C18, 2.5 µm
 Column Size: 2.0 x 50 mm
 SiliCycle PN: H141802E-E050
 Mobile Phase: 1 mM ammonium formate in (2/98) MeOH/H₂O, 0.1% formic acid (v/v)
 Temperature: 23°C
 Flow Rate: 0.600 mL/min
 MS Splitting Flow: 0.300 mL/min
 Detector: Sciex API 3000
 Turbo Ion Spray Heater Gas Flow: 8,000 cc/min
 Turbo Ion Spray Heater Temperature: 400°C, ESI⁺
 MRM Transition: 71.9 → 55.1
 Injection Volume: 10 µL





Acrylamide Determination in Fried Potato Chips (con't)

Calibration Curve (100 - 2,000 µg/Kg, $n = 3$)



HIGH
PRECISION

Method Precision Results ($n = 3$)

Acrylamide added (µg/Kg)	Theoretical Concentration (µg/Kg)	Measured Concentration (µg/Kg)
0	200	195 ± 15
100	300	308 ± 19
200	400	394 ± 11
500	700	699 ± 11
1,000	1,200	1,260 ± 28
2,000	2,200	2,116 ± 47

GREAT
ACCURACY

Method Accuracy Results ($n = 3$)

Level of Concentration (µg/Kg)	Accuracy (%)	CV (%)
100	102 ± 6	4.9
500	99 ± 2	1.0
2,000	96 ± 2	3.2



Determination of Carbendazim in Orange Juice

Carbendazim is a fungicide used in some countries to preserve agricultural crops. The use of this fungicide on oranges and orange juice concentrates is not approved by the Environmental Protection Agency (EPA) and is illegal in the United States. Recently, the Food and Drug Administration (FDA) has received reports that low levels of the fungicide have been found in some orange juice that contain imported orange juice concentrates.

SiliaPrepX SCX 3 mL/60 mg
SiliCycle PN: SPE-P0005-03BB

Sample Preparation

- Centrifugate 5 mL of orange juice 5 min at 3,000 rpm
- Sample 1 mL of the supernatant
- Add 2 mL of acetic acid 10% and vortex 1 min

Conditioning Step

- 3 mL of MeOH and 3 mL of acetic acid 10%

Loading Step

- Pass 3 mL of the treated sample through the cartridge

Washing Step

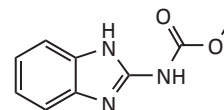
- 2 mL of acetic acid 10%
- 2 mL of MeOH

Elution Step

- 3 mL of 5% NH₄OH in MeOH

Reconstitution Step

- Evaporate under a stream of nitrogen (10 min at 40°C)
- Reconstitute with 3 mL of (10/90) MeOH/H₂O (v/v)

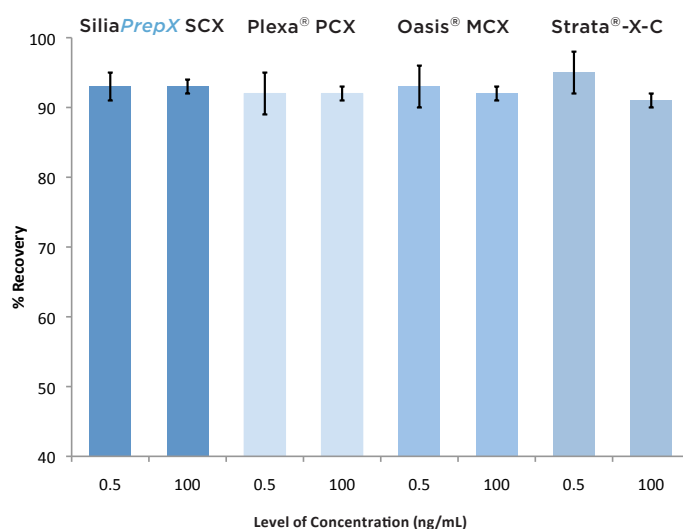


Carbendazim

Chromatographic Conditions:

Column: SiliaChrom dt C18, 2.5 μm
Column Size: 3.0 x 30 mm
SiliCycle PN: H141802E-H030
Mobile Phase: 1 mM ammonium formate in (20/80) MeOH/H₂O, 0.1% formic acid (v/v)
Temperature: 23°C
Flow Rate: 0.800 mL/min
MS Splitting Flow: 0.300 mL/min
Detector: Sciex API 3000
Turbo Ion Spray Heater Gas Flow: 8,000 cc/min
Turbo Ion Spray Heater Temperature: 400°C, ESI⁺
MRM Transition: 192.1 → 160.2
Injection Volume: 5 μL

Recovery Results at 0.5 & 100 ng/mL (n = 3)



Method Accuracy Results (n = 3)

Level of Concentration	Concentration (ng/mL)	Accuracy (%)
LLQC	0.5	89 ± 4
QC1 (3x LLQC)	1.5	106 ± 2
QC2 (30% ULQC)	30	89 ± 1
QC3 (70% ULQC)	70	94 ± 1
ULQC	100	107 ± 1

Method Accuracy Results (n = 3)

Brand	Ion Suppression (%)
SiliaPrepX SCX	-11
Plexa® PCX	-11
Oasis® MCX	-10
Strata®-X-C	-11



Amphetamine Quantification in Human Urine

SiliaPrepX HLB 3 mL/60 mg
SiliCycle PN: SPE-P0002-03BB

Sample Preparation

- 10 mL of urine is treated with 100 μ L of TFA

Conditioning Step

- 3 mL of MeOH and 3 mL of H₂O

Loading Step

- Pass 1 mL of the treated sample through the cartridge

Washing Step

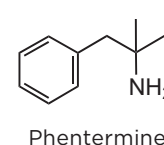
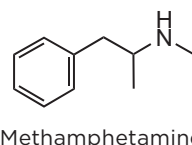
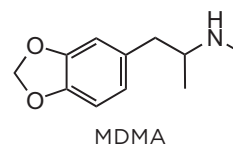
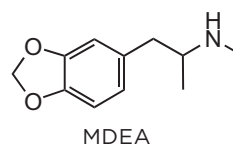
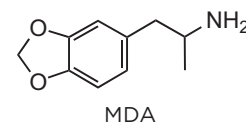
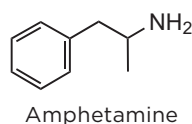
- 3 mL (5/95) MeOH/H₂O, 2% NH₄OH (v/v)
- 3 mL (20/80) MeOH/H₂O, 2% NH₄OH (v/v)
- 1 mL (80/20) MeOH/H₂O (v/v)

Elution Step

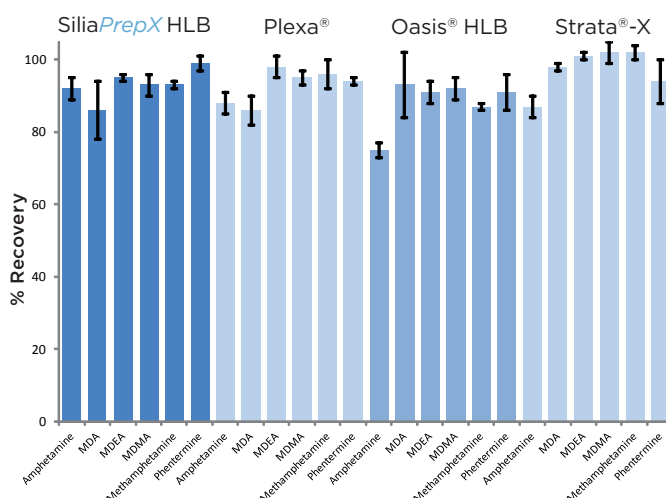
- 3 mL MeOH
- 3 mL 2% formic acid in MeOH

Reconstitution Step

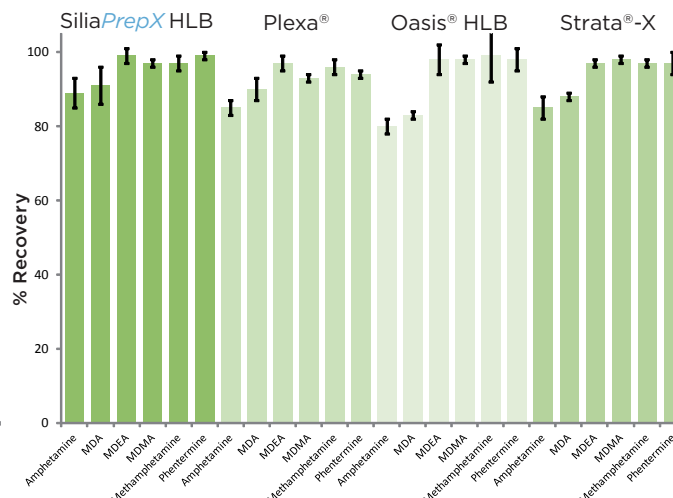
- Evaporate under a stream of nitrogen (20 min at 40°C)
- Reconstitute with 3 mL of the mobile phase solution



Recovery Results 5 ng/mL ($n = 3$)



Recovery Results 250 ng/mL ($n = 3$)



Chromatographic Conditions:

Column: SiliaChrom XT C18, 5 μ m
 Column Size: 4.6 x 50 mm
 SiliCycle PN: H171805H-N050
 Mobile Phase: 1 mM ammonium formate in (70/30) MeOH/H₂O, 0.1% NaOH (v/v)
 Temperature: 23°C
 Flow Rate: 1.000 mL/min
 Detector: Sciex API 3000
 Turbo Ion Spray Heater Gas Flow: 8,000 cc/min
 Turbo Ion Spray Heater Temperature: 350°C, ESI⁺, MRM SCAN
 Injection Volume: 5 μ L

Ion Suppression Measured at 250 ng/mL ($n = 3$)

Compounds	SiliaPrepX HLB (%)	Plexa® (%)	Oasis® HLB (%)	Strata®-X (%)
Amphetamine	-9	-4	-4	7
MDA	-7	-5	-5	3
MDEA	-6	-5	-4	-2
MDMA	-12	-11	-12	-10
Methamphetamine	-7	-3	-4	7
Phentermine	11	15	15	21



Sulfonamides, Tetracyclines & Pyrimethamines in Milk

SiliaPrepX HLB 3 mL/60 mg
SiliCycle PN: SPE-P0002-03BB

SiliaPrepX DVB 3 mL/60 mg
SiliCycle PN: SPE-P0001-03BB

Sample Preparation

- Vortex (2 min) 250 μ L of 20% trichloroacetic acid (TCA) in H_2O (w/v) with 600 μ L of bovine milk
- Add 2.5 mL of McIlvain buffer (vortex 3 min)
- pH adjustment of the solution at 5.5 with NaOH 1.0 M
- Centrifuge at 3,000 rpm for 5 min

Conditioning Step

- 3 mL of MeOH and 3 mL of H_2O

Loading Step

- Pass 1 mL of the treated sample through the cartridge

Washing Step

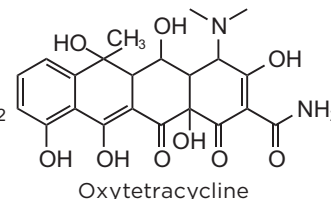
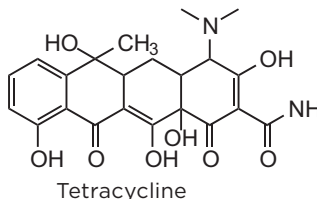
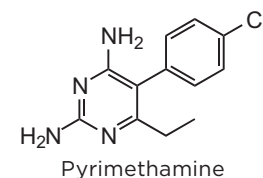
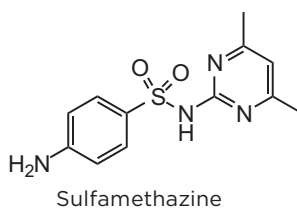
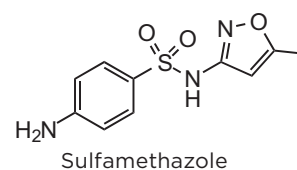
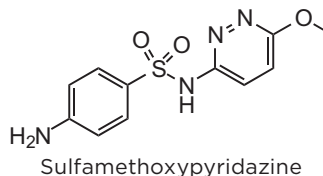
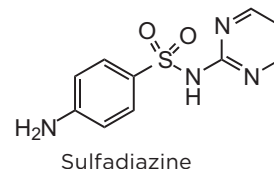
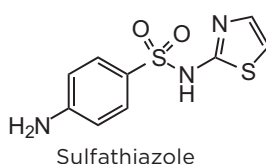
- 2 x 3 mL (10/90) MeOH/buffer ammonium acetate pH 5.5 (v/v) and dry the cartridge

Elution Step

- 3 mL of MeOH

Reconstitution Step

- Evaporate under a stream of nitrogen (40 min at 40°C)
- Reconstitute with 300 μ L of (90/10) MeOH/ H_2O (v/v)



Chromatographic Conditions:

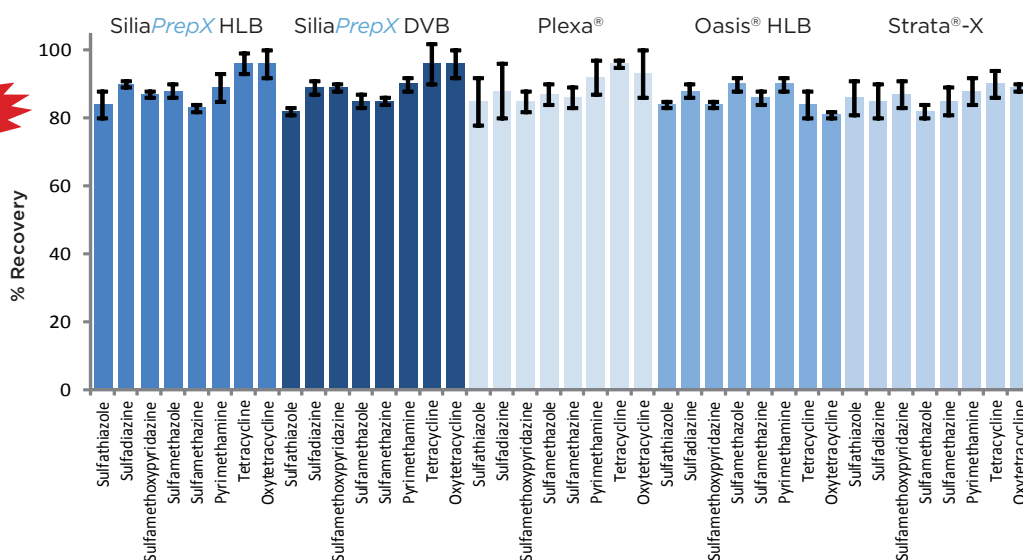
Column: SiliaChrom dt C18, 2.5 μ m
Column Size: 3.0 x 30 mm
SiliCycle PN: H141802E-H030
Mobile Phase: MPA 1mM ammonium formate in (90/10) MeOH/ H_2O , 0.1% formic acid (v/v)
MPB 1mM ammonium formate in (10/90) MeOH/ H_2O , 0.1% formic acid (v/v)
Temperature: 23°C
Flow Rate: 1.000 mL/min
Detector: Sciex API 3000
Turbo Ion Spray Heater Gas Flow: 8,000 cc/min
Turbo Ion Spray Heater Temperature: 375°C, ESI⁺, MRM SCAN
Injection Volume: 10 μ L

Gradient		
Time (min)	MPA (%)	MPB (%)
0	90	10
1.25	90	10
2.51	60	40
3.00	60	40
3.01	90	10
5.00	90	10

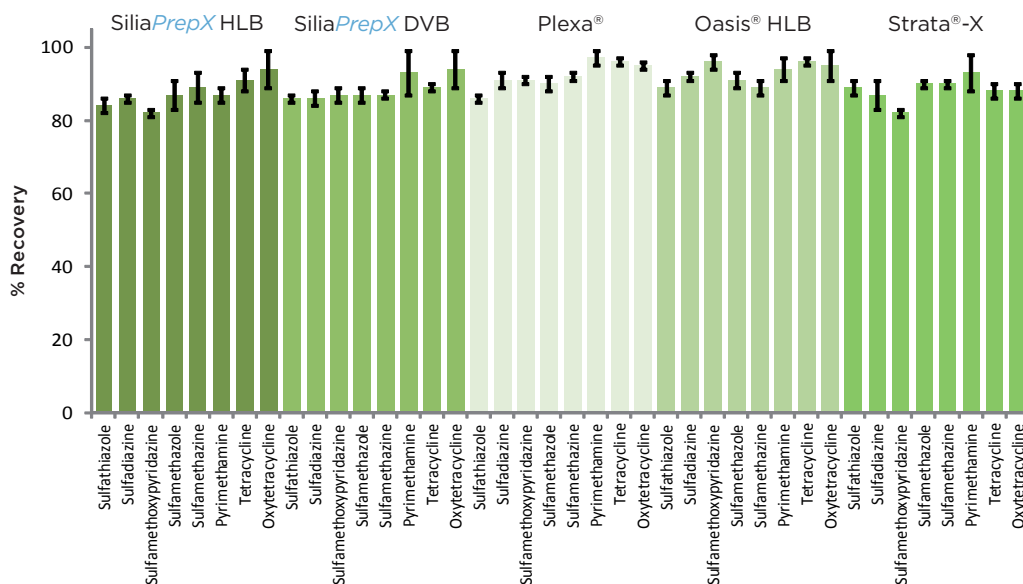


Sulfonamides, Tetracyclines & Pyrimethamines in Milk (con't)

Recovery Results 10 ng/mL ($n = 3$)



Recovery Results 100 ng/mL ($n = 3$)



Ion Suppression Measured at 100 ng/mL ($n = 3$)

Compounds	SiliaPrepX HLB (%)	SiliaPrepX DVB (%)	Plexa® (%)	Oasis® HLB (%)	Strata®-X (%)
Sulfathiazole	-1	-1	1	-2	-2
Sulfadiazine	-1	-2	-2	-3	2
Sulfamethoxypyridazine	-6	-3	-5	-13	-6
Sulfamethazole	7	8	1	7	7
Sulfamethazine	5	6	1	5	7
Pyrimethamine	-12	-9	-4	-7	-7
Tetracycline	-5	-1	-1	-5	-4
Oxytetracycline	1	-5	-1	-3	2

Determination of Trace Pesticides in Water

SiliaPrepX HLB 6 mL/200 mg
SiliCycle PN: SPE-P0002-06G

Conditioning Step

- 6 mL of MeOH and 3 mL of H₂O (HPLC grade)

Loading Step

- Pass 100 mL of drinking water through the cartridge

Washing Step

- 6 mL of H₂O (HPLC grade)

Elution Step

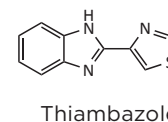
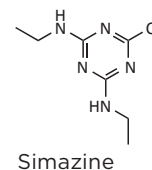
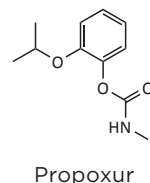
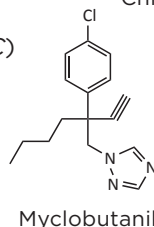
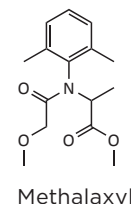
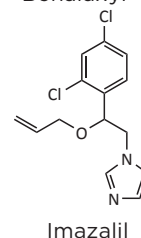
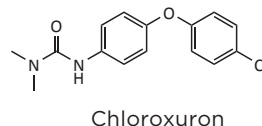
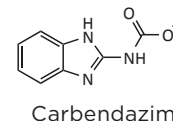
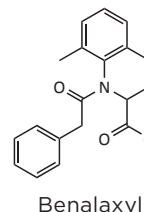
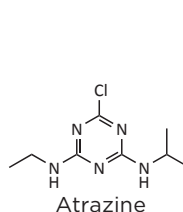
- 2 x 6 mL of MeOH

Reconstitution Step

- Evaporate under a stream of nitrogen (10 min at 50°C)
- Reconstitute with 2 x 3 mL of MeOH

Chromatographic Conditions:

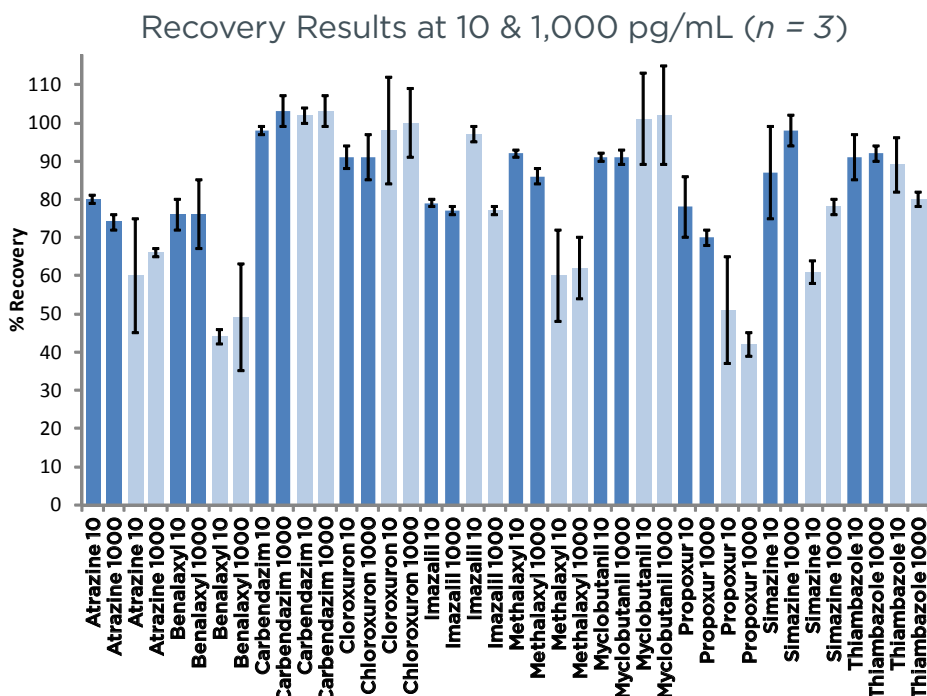
Column: SiliaChrom dt C18, 3 µm
Column Size: 3.0 x 30 mm
SiliCycle PN: H141803E-H030
Mobile Phase: MPA: 1 mM ammonium formate in (10/90) MeOH/H₂O, 0.1% formic acid (v/v)
MPB: 1 mM ammonium formate in (90/10) MeOH/H₂O, 0.1% formic acid (v/v)
Temperature: 23°C
Flow Rate: 0.800 mL/min
MS Splitting Flow: 0.300 mL/min
Detector: Sciex API 3000
Turbo Ion Spray Heater Gas Flow: 8,000 cc/min
Turbo Ion Spray Heater Temperature: 375°C, ESI⁺, MRM
Injection Volume: 5 µL



Gradient & MRM Transition

Time (min)	MPA (%)	MPB (%)
0.00	100	0
10.00	0	100
10.01	100	0
12.00	100	0

Analyte	MRM Transition
Atrazine	216.1 → 174.1
Benalaxyl	326.2 → 148.2
Carbendazim	192.1 → 160.2
Chloroxuron	291.1 → 72.0
Imazalil	297.0 → 159.1
Methalaxyl	280.2 → 220.3
Myclobutanil	289.1 → 70.0
Propoxur	210.1 → 111.2
Simazine	202.1 → 174.2
Thiambazole	202.2 → 175.1





Caffeine, Cotinine & Nicotine in Human Urine

SiliaPrepX HLB 3 mL/60 mg
SiliCycle PN: SPE-P0002-03BB

Sample Preparation

- Mix 500 µL of urine with 1.5 mL of NaOH 0.1 M

Conditioning Step

- 3 mL of MeOH and 3 mL of H₂O

Loading Step

- Pass 1 mL of the treated sample through the cartridge

Washing Step

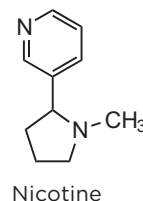
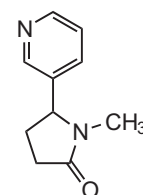
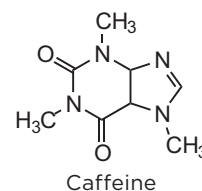
- 3 mL H₂O and dry the cartridge

Elution Step

- 3 mL of MeOH

Reconstitution Step

- Evaporate under a stream of nitrogen (20 min at 40 °C)
- Reconstitute with 1.5 mL (80/20) MeOH/H₂O (v/v)

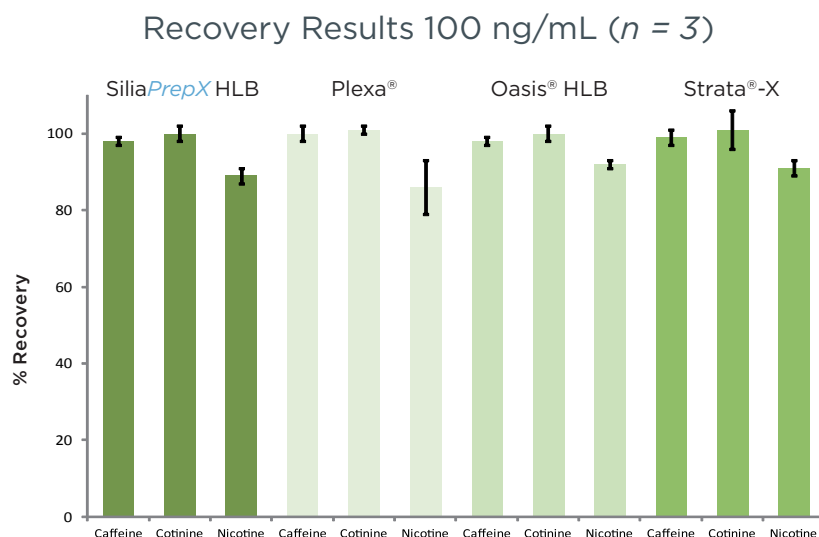
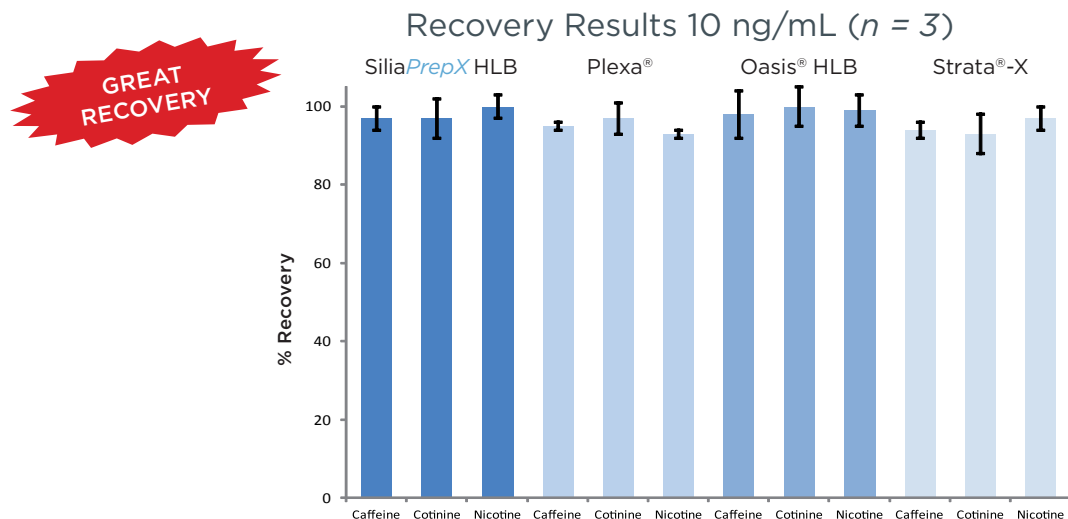


Chromatographic Conditions:

Column: SiliaChrom XT C18, 5 µm
Column Size: 4.6 x 50 mm
SiliCycle PN: H171805H-N050
Mobile Phase: MPA 1 mM ammonium formate in (90/10) MeOH/H₂O, 0.1% formic acid (v/v)
MPB 1 mM ammonium formate in (10/90) MeOH/H₂O, 0.1% formic acid (v/v)
Temperature: 23°C
MS Splitting Flow: 0.25 mL/min
Flow Rate: 1.000 mL/min
Detector: Sciex API 3000
Turbo Ion Spray Heater Gas Flow: 8,000 cc/min
Turbo Ion Spray Heater Temperature: 375°C, ESI⁺, MRM SCAN
Injection Volume: 10 µL

Gradient		
Time (min)	MPA (%)	MPB (%)
0	75	25
1.25	75	25
1.26	10	90
2.50	10	90
2.51	100	0
3.00	100	0
3.01	0	100
5.00	0	100

Caffeine, Cotinine & Nicotine in Human Urine (*con't*)



Ion Suppression Measured at 100 ng/mL ($n = 3$)

LOW ION SUPPRESSION

Compounds	SiliaPrepX HLB (%)	Plexa® (%)	Oasis® HLB (%)	Strata®-X (%)
Caffeine	-10	-10	-6	-6
Cotinine	-13	-13	-14	-14
Nicotine	8	9	8	8



Caffeine, Cotinine & Nicotine in Human Urine (*con't*)

SiliaPrepX HLB

Lot-to-lot Reproducibility 100 ng/mL ($n = 3$)

