

PATENT PENDING

a NEW way to

Simplify Your Liquid Extractions

- Faster and easier than liquid-liquid extraction
- Easily automate to increase throughput
- Avoid analyte loss due to emulsions
- Process small and large sample volumes

Are You
Currently Using SLE?
Learn why Novum
is redefining SLE
www.phenomenex.com/
Dinosaur

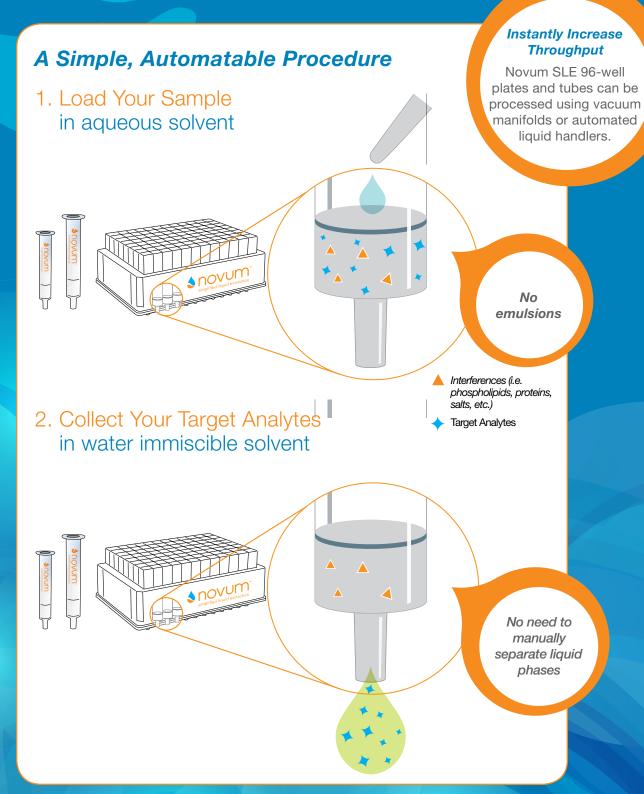






Simplify Your Liquid-Liquid Extraction

Now you can alleviate the challenges associated with traditional liquid-liquid extraction with Novum[™] Simplified Liquid Extraction (SLE) (patent pending).



A Faster and Easier Solutionp. 4

Consistent, Reliable Resultsp. 5

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Are You
Currently Using SLE?
Find out what makes
Novum SLE different at
www.phenomenex.com
/Dinosaur



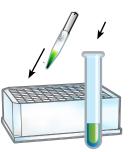
Terrellasaurus – first discovered in Torrance, CA.

Faster and Easier than Liquid-Liquid Extraction

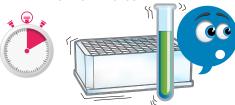
Novum[™] SLE will instantly increase your throughput by eliminating time consuming steps and reducing the risk of analyte loss. If further time savings are necessary, Novum SLE can be easily automated for rapid, hands free sample cleanup.



 Dilute sample 1:1 with buffer or water and add extraction solvent



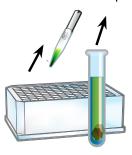
2. Mix for 10 minutes

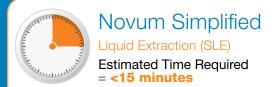


3. Centrifuge for 10 minutes

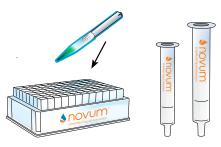


4. Pour off or freeze supernatant





 Dilute sample 1:1 with buffer or water and load onto Novum SLE sorbent using 2–15 seconds of vacuum



2. Wait 5 minutes



3. Apply elution solvent and allow to elute via gravity. Complete elution with 10 seconds of vacuum.





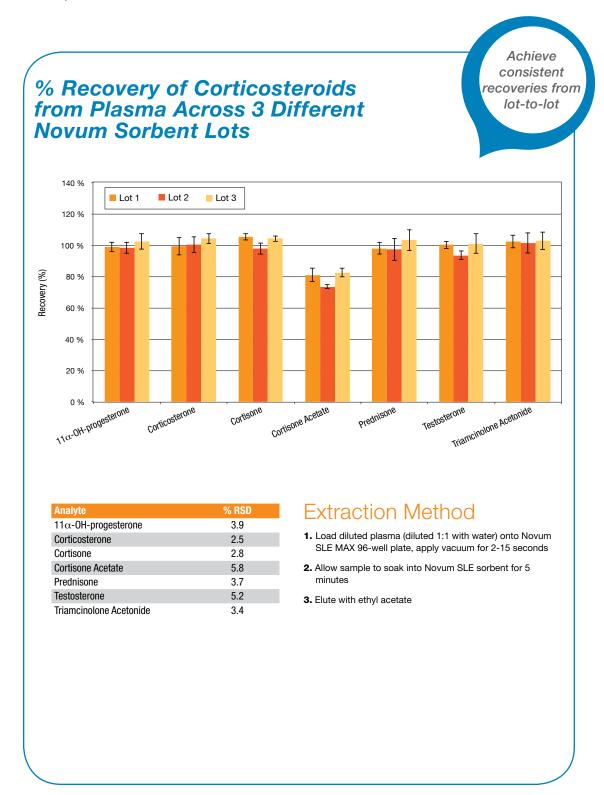
- Rapid, automatable method for high throughput cleanup
- Stop worrying about analyte loss due to emulsions

Visit www.phenomenex.com/Novum for buffer and elution solvent recommendations, technical notes, demonstration videos, and more!

1. Russell Grant, Matthew Crawford, Brian Rappold, and Stacy Dee. Errors in Bioanalysis Due to Phospholipids – Definitive Measurement, Mechanism, and Management. ASMS 2011.

Reliable Cleanup, from Lot-to-Lot

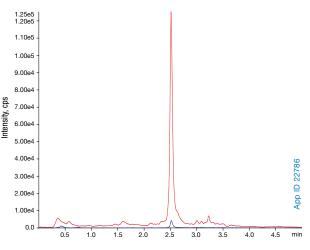
Avoid inconsistent results due to the formation of emulsions or variances between technicians. The unique, synthetic Novum™ SLE sorbent is designed to provide consistent cleanup and recoveries from lot-to-lot.



Easily Clean Up Urine Samples

Urine contains salts and other contaminants that can decrease your column lifetime and interfere with MS detection. Rapidly and reproducibly cleanup diluted urine or hydrolyzed urine samples without the need to perform extensive method development.

COOH-THC (11-nor-9-carboxy-Δ⁹-tetrahydrocannabinoid) from Urine using Novum[™] SLE



HPLC Conditions

Column: Kinetex® 2.6 µm C8
Dimensions: 50 x 2.1 mm
Part No.: 00B-4497-AN

Mobile Phase: A: 0.1 % Formic acid in Water B: Methanol/Acetonitrile (50:50)

Gradient: Time (min) % B
0.0
2.5
95
3.5
95
5.0
50

Flow Rate: $0.5\,\text{mL/min}$ Injection Volume: $20\,\mu\text{L}$ Temperature: Ambient

Detection: MS/MS, API 5000™ (AB SCIEX), ESI+

MS/MS Conditions

CUR: 25.00 GS1: 50.00 GS2: 50.00 TEM: 600.00 CAD: 7.00 IS: 5500.00 DP: 55.00

Enzymatic Hydrolysis

To 300 μ L urine add 75 μ L of 300 mM Ammonium acetate (pH 4.0) and 25 μ L of β -Glucuronidase solution (100,000 units/mL). Mix and vortex for 30 seconds. Incubate at 37 – 40 °C for 60 minutes. After incubation, bring samples to room temperature.

Novum SLE Procedure



Load pre-treated sample onto a Novum SLE MAX 96-well plate. Apply a gentle pulse of vacuum (~5-10 seconds at 5" Hg or less) until the sample has completely entered the media.



Wait for 5 minutes.



Dispense 2x 900 µL Ethyl acetate onto the Novum SLE sorbent and collect solvent under gravity in a collection plate, pooling fractions. Apply vacuum at 5" Hg (or lower) for 20-30 seconds to complete the extraction.



Dry down and reconstitute in 200 μ L mobile phase.

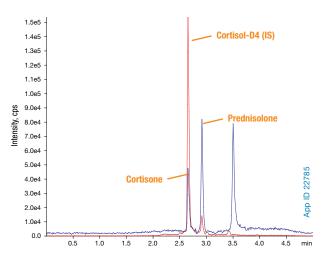


Analyte	% Absolute Recovery	%CV (N=8)
11-nor-9-carboxy- Δ ⁹ -THC	83	3.5

Rapid, Automatable Cleanup of Plasma Samples

Plasma contains a variety of interferences that can negatively affect downstream analysis. Proteins can clog HPLC columns while phospholipids can cause ion suppression or enhancement in MS analysis. Novum SLE provides a simple, automatable solution for removing these interferences.

Cortisone and Prednisolone from Plasma using Novum[™] SLE on a Tecan Freedom EVO[®] Liquid Handler



HPLC Conditions
Column: Kinetex® 2.6 µm Biphenyl
Dimensions: 50 x 3.0 mm

Part No.: 00B-4622-Y0

Mobile Phase: A: 10 mM Ammonium acetate in Water
B: 10 mM Ammonium acetate in Methanol

Gradient: Time (min) % B
0.00 50
2.00 95
3.10 95
3.11 50
5.00 50

Flow Rate: 0.45 mL/min Injection Volume: 10 µL Temperature: Ambient Detection: MS/MS, API 5000™ (AB SCIEX), ESI+

Analyte	RT, min	Q1, Da	Q3, Da	CE
Cortisone	2.66	361.1 361.1	121.2 163.2	25
Cortisol-D4 (IS)	2.69	367.1	121.2	28
Prednisolone	2.92	361.1 361.1	121.2 163.2	28

Analyte	% Absolute Recovery	%CV (N=8)
Prednisolone	95	5.4
Cortisone	99	3.6

Sample Pre-treatment

Dilute 150 μ L plasma with 150 μ L 50 mM Sodium phosphate dibasic heptahydrate (pH unadjusted). Mix briefly (3-5 seconds).

Novum SLE Procedure



Load pre-treated sample onto a Novum SLE MINI 96-well plate. Apply a gentle pulse of vacuum (~5-10" Hg for 20 seconds) until the sample has completely entered the media.



Wait for 5 minutes.



Dispense 1 mL Ethyl acetate onto the Novum SLE sorbent and collect solvent under gravity in a collection plate. Apply vacuum at 5" Hg (or lower) for 45 seconds to complete the extraction.



Dry down and reconstitute in 150 μ L mobile phase fortified with cortisol-D4.



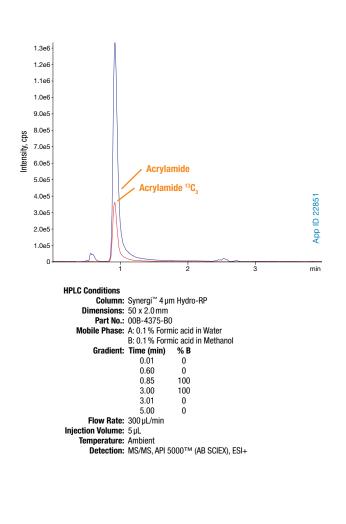
Sample pre-treatment and Novum SLE procedure were performed using a Tecan Freedom EVO® liquid handler to provide rapid, hands free sample processing.

View the complete technical note at www.phenomenex.com/Novum

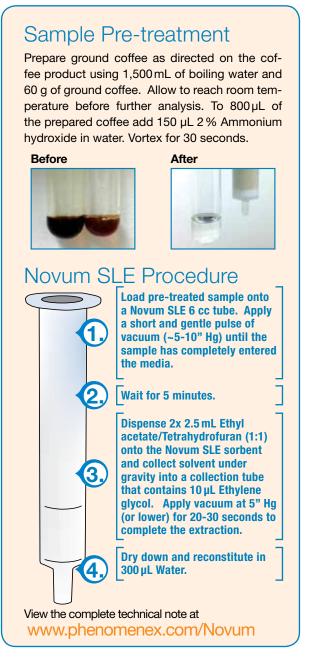
Remove Interferences from Complex Food Matrices

Food matrices are complex and contain a variety of interferences that can negatively impact downstream analysis. Liquid-liquid extraction has historically been a popular means of sample cleanup for food matrices however this process can be laborious. Now labs can simplify the liquid extraction process with Novum™ SLE.

Acrylamide from Coffee using Novum SLE



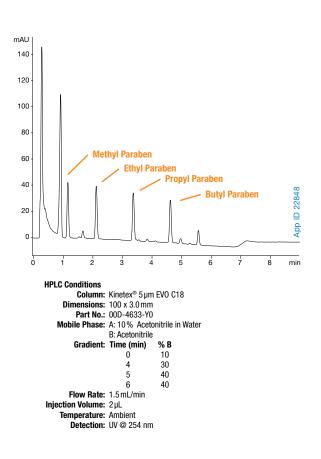
Analyte	RT, min	Q1, Da	Q3, E	Da CE
Acrylamide	0.92	72 72	54.9 43.9	72
Acrylamide 13C ₃ (IS)	72	75	58.2	2 16
Analyte				
Acrylamide (100 ng/ml.)		95		0.78



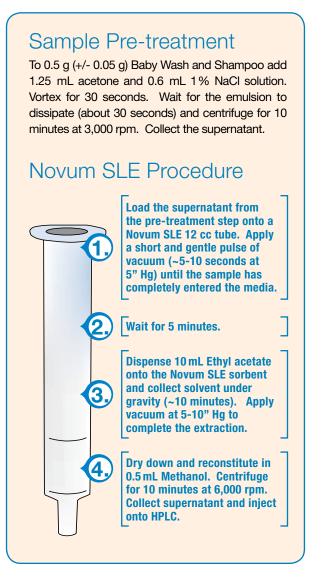
Clean Up Challenging Personal Care Products

Personal care products can pose several challenges during the sample preparation process including analyte loss due to the formation of emulsions that can occur during lengthy liquid-liquid extractions. Eliminate the risk of analyte loss due to emulsions and simplify the liquid extraction process with Novum™ SLE.

Parabens from Baby Wash and Shampoo using Novum SLE



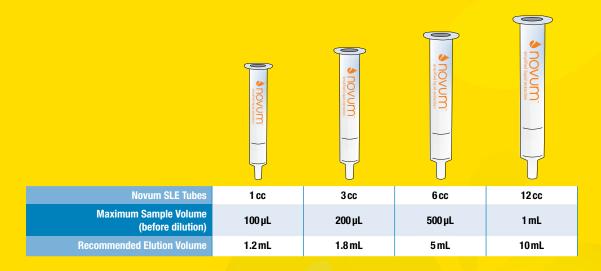
Analyte	% Absolute Recovery	%CV (N=8)
Methyl paraben	85	7.2
Ethyl paraben	88	5.9
Propyl paraben	82	6.0
Butyl paraben	86	5.0



A Variety of Formats to Fit Your Sample and Throughput Requirements

Tubes

Process samples as small as 100 µL or as large as 1 mL using Novum SLE tubes. Ideal for all types of applications including Bioanalytical, Food Safety, and Environmental.



96-Well Plates

(before dilution)

Recommended Elution Volume

Process 96 samples at once in an easily automatable 96-well plate. Perfect for high throughput applications.



1 mL

1.8 mL

Novum Simplified Liquid Extraction (SLE) Products

96-Well Plates

Part No.	Description	Unit	Price
8E-S138-FGA	Novum SLE MINI 96-Well Plate	1/pk	
8E-S138-5GA	Novum SLE MAX 96-Well Plate	1/pk	



96-Well Plate Accessories

00 VVC1	111416716663501165		
Part No.	Description	Unit	Price
Collection P	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	
AH0-7194	96-Well Collection Plate, 2 mL/well	50/pk	
AH0-8635	96-Well Collection Plate, 2 mL/well Square/Round-Conical	50/pk	
AH0-8636	96-Well Collection Plate, 2 mL/well Round/Round, 8 mm	50/pk	
AH0-7279	96-Well Collection Plate, 1 mL/well Round, 7 mm	50/pk	
Sealing Mat	ts		
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 Ma	nifold		
AH0-8950	96-Well Plate Manifold, Universal with Vacuum Gauge	ea	

Tubes

Part No.	Description	Unit	Price
8B-S138-FAK	Novum SLE 1 cc tubes	100/pk	
8B-S138-5BJ	Novum SLE 3 cc tubes	50/pk	
8B-S138-JCH	Novum SLE 6 cc tubes	30/pk	
8B-S138-KDG	Novum SLE 12 cc tubes	20/pk	



Tube Accessories

Vacuum Manifolds			
Part No.	Description	Unit	Price
AH0-6023	12-Position Vacuum Manifold Set	ea	
AH0-6024	24-Position Vacuum Manifold Set	ea	



If Novum SLE products do not perform as well or better than your current SLE product, return the product with comparative data within 45 days for a FULL REFUND.

Terms and Conditions

Subject to Phenomenex Standard Terms and Conditions, which may be viewed at www.phenomenex.com/TermsAndConditions.

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Novum is patent pending.

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