

Strata DE

Supported Liquid Extraction



Cost effective alternative to other
diatomaceous earth SLE products

Don't pay more for diatomaceous earth SLE!

Strata® DE is a guaranteed alternative to traditional diatomaceous earth SLE that will provide equivalent or better recoveries than your current SLE solution.

Now with two unique SLE sorbents from Phenomenex, we provide outstanding performance and reliability in our SLE portfolio.

Need help finding the right SLE sorbent? **Call us today!**



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guarantee

If Phenomenex 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.

Two Unique SLE Sorbents

Explore Your SLE Options

Phenomenex provides two options for your SLE analysis, a unique synthetic sorbent and a traditional diatomaceous earth sorbent, each of which provides its own benefits. Select the best option for your work by using the chart below.



Synthetic	Sorbent	Diatomaceous Earth
Lot-to-lot consistency and reproducibility	Advantages	Cost effective and large volume capabilities
Ethyl Acetate, Methyl Tert-Butyl Ether (MTBE)	Extraction Solvents	Dichloromethane (DCM), Hexane, MTBE, Ethyl Acetate
MINI 96-Well Plates, MAX 96-Well Plates	Plate Formats	200 μL 96-Well Plates, 400 μL 96-Well Plates
1 cc, 3 cc, 6 cc, 12 cc	Tube Formats	12 cc and 60 cc

Need Help Selecting the Right SLE Option?



Call us

or





Live Chat

www.phenomenex.com/LiveChat

Trust Your Sorbent

Quality Tested for Reliability and Reproducibility





**Certificate
of Analysis**

Strata products for supported liquid extraction are manufactured with the highest purity reagents and raw materials. Every lot must conform to our strict specification ranges and is subjected to a wide range of rigorous quality control tests and physicochemical characterization methods. These tests include (but are not limited to) the following


Strata DE, 200 μ L 96-Well Plate

Sorbent Lot Number: S0820-1


Sorbent Analysis	
pH:	Pass
Extraction Residue (mg/g):	Pass
Particle Size:	Pass
Water Content:	<1%
Bulk Density:	32-40g/100 mL

Particle Size Data	
Mesh +60 Sieves (%)	<10%
Mesh -300 (%)	<10%

Production Lot Tests	
Sorbent Weight:	Pass
Flow Rate:	Pass
Water Holding Capacity:	Pass

Approved By:  _____
Quality Assurance

Date Approved: September 8, 2017

 www.phenomenex.com/mysupport
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QUALITY
MANAGEMENT SYSTEM
CERTIFIED BY DNV GL
== 9001:2008 ==

How Does Our QC Test Benefit You?

Test	The Advantage
✓ pH	Ensuring optimal extraction conditions for your samples
✓ Particle Size	Providing a consistent flow across wells and tubes
✓ Flow Rate	Verifying even particle distribution and low variety between lots of sorbents
✓ Water Holding Capacity	For accurate loading and extraction volumes, preventing breakthrough of sample

Save Money Without Compromising Results

Equivalent recoveries to Biotage® ISOLUTE® SLE+

Packed with diatomaceous earth, Strata DE is a cost-effective alternative to traditional SLE products such as Biotage ISOLUTE SLE+, Thermo® Hypersep™ SLE, and Agilent® Chem Elut™ SLE that won't require you to sacrifice your results.

Recommended Uses:

- Direct alternative to traditional diatomaceous earth SLE sorbents
- Non-oxygenated extraction solvents such as DCM and Hexane

Recovery Values and % CVs: Strata DE vs. Biotage ISOLUTE SLE+

Analyte	Strata DE		Biotage ISOLUTE SLE+	
	% Recovery	%CV (n=8)	% Recovery	%CV (n=8)
6-MAM	98	9	88	16
Alprazolam	104	10	98	11
Benzoylcegonine	88	6	98	11
Buprenorphine	93	7	102	15
Codeine	99	12	93	9
Diazepam	107	7	104	6
Fentanyl	85	5	94	8
Hydrocodone	104	11	93	11
Hydromorphone	95	9	93	11
Lorazepam	94	8	98	8
Methamphetamine	92	16	102	8
Morphine	98	12	94	12
Norbuprenorphine	101	11	92	11
Nordiazepam	100	9	92	8
Norfentanyl	113	7	110	11
Oxycodone	97	5	93	11
PCP	90	7	98	6

Comparative separations may not be representative of all applications. Phenomenex is in no way affiliated with Biotage AB Corp.

Achieve the Same Recoveries as Biotage ISOLUTE SLE+, at a Lower Price!

SLE Protocol

96-Well Plate:	Strata® DE SLE 400 µL 96-Well Plate Biotage ISOLUTE SLE+ 400 µL 96-Well Plate
Part No.:	8E-S325-5GB (Strata DE)
Load:	300 µL pre-treated sample onto plate (apply vacuum or positive pressure to pull/push sample into sorbent if necessary)
Wait:	6 minutes
Elute:	3x 600 µL Dichloromethane/IPA (95:5)
Apply:	Vacuum or apply positive pressure at 5-10" Hg for 10 seconds
Dry:	Sample under slow stream of Nitrogen at 30°C
Reconstitute:	100 µL 0.1% Formic Acid/Methanol (4:1) with internal standard

Utilize Large Volume Capabilities

Sensitive and accurate results for up to 20 mL sample volumes

Sterols in Olive Oil

Pre-treatment

Add 40 μL of 1 mg/mL cholestanol in chloroform to a clean, dry 20 mL screw-top test tube and evaporate to dryness under a nitrogen flow.

Saponification

1. Add 200 mg of olive oil sample to the test tube containing the internal standard.
2. Add 1.5 mL of 2M Potassium hydroxide in 95 % Ethanol.
3. Cap the tube and heat in an 80 °C oven for 25 minutes.
4. Mix sample gently to ensure homogeneity (sample should appear as a clear solution) and continue heating for an additional 25 minutes.
5. After heating, add 13.5 mL of deionized water and mix. The entire diluted volume is now ready to load onto the SLE cartridge.

SLE Protocol

Cartridge:	Strata® DE SLE cartridge, 20mL loading capacity, 60 cc Tube
Part No.:	8B-S325-VFF
Load:	Diluted sample (from saponification step 5) plus 2x 1 mL DI water rinse (17 mL total volume, gravity flow)
Wait:	15 minutes
Extract:	3x 15 mL Diethyl Ether (gravity flow)
Evaporate:	Dry under N_2 at 40 °C (greenish-yellow, oily residue)
Reconstitute:	5 mL of Hexane

SPE (Solid Phase Extraction) Protocol and Derivatization

Cartridge:	Strata Si-1 (1 g/6 mL) tube
Part No.:	8B-S012-JCH
Condition:	1. 2x 6 mL Hexane 2. 1 mL 0.2M Potassium hydroxide in 95 % ethanol
Equilibrate:	5 mL Hexane immediately after potassium hydroxide elution
Load:	Reconstituted SLE extract (5 mL) followed by 2x 1 mL Hexane rinses
Wash:	85 mL Hexane/Diethyl ether (98:2) under 3" Hg vacuum, flow rate of 2 mL/min.*
Elute:	10 mL Hexane/Diethyl ether (60:40)
Dry:	Dry under N_2 at 50 °C. After evaporating to dryness, add 3-4 drops of acetone and then re-evaporate under N_2 to remove any occluded water. Place in 100 °C oven for 10 minutes.
Derivatization:	250 μL Pyridine/BSTFA (3:1) at 80 °C for 30 minutes

*To handle the large volume of eluant, a 60 mL empty reservoir tube was attached to the 6 mL SPE tube.



Utilize Large Volume Capabilities *cont'd*

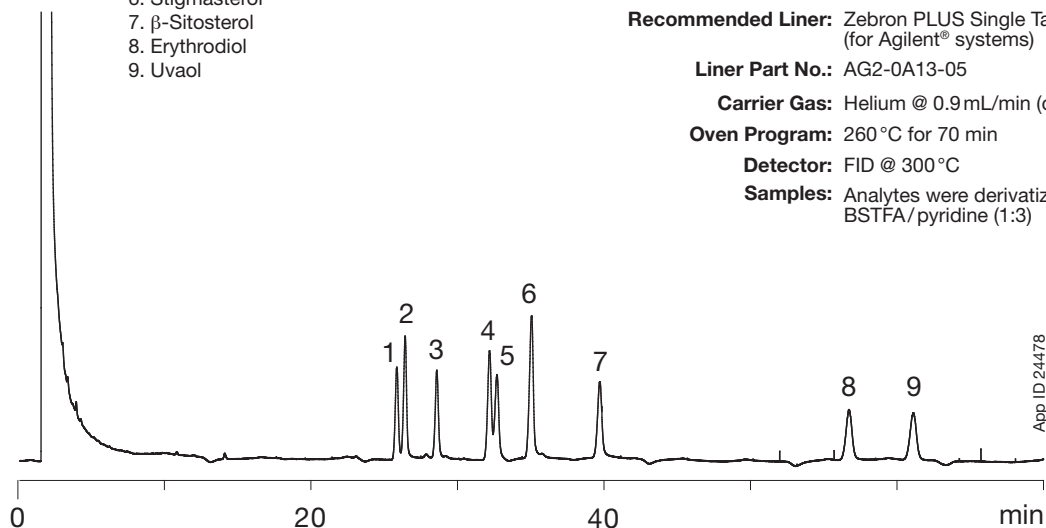
Sterols in Olive Oil

Analytes

1. Cholesterol
2. Cholestanol
3. Brassicasterol
4. 24-Methylene Cholesterol
5. Campesterol
6. Stigmasterol
7. β -Sitosterol
8. Erythrodiol
9. Uvaol

GC Conditions

Column: Zebron™ ZB-5PLUS™
Part No.: 7HG-G032-11
Dimensions: 30m x 0.25mm x 0.25 μ m
Injection: Split 5:1 @ 280 °C, 1 μ L
Recommended Liner: Zebron PLUS Single Taper Z-Liner™ (for Agilent® systems)
Liner Part No.: AG2-0A13-05
Carrier Gas: Helium @ 0.9mL/min (constant flow)
Oven Program: 260 °C for 70 min
Detector: FID @ 300 °C
Samples: Analytes were derivatized with BSTFA/pyridine (1:3)



IOC Sterol Criteria for Virgin Olive Oil Classification

Standard Name	IOC Standard Criteria for Virgin Olive Oil	Extra Virgin Olive Oil		Adulterated Olive Oil	
		% Recovery	% RSD (n=3)	% Recovery	% RSD (n=2)
Apparent β-Sitosterol*	$\geq 93.0\%$ of total sterols	94.6 %	0.3	60.3 %	1.2
Cholesterol	$\leq 0.5\%$ of total sterols	not detected	-	0.3 %	13.3
Brassicasterol	$\leq 0.1\%$ of total sterols	not detected	-	8.7 %	0.7
Campesterol	$\leq 4.0\%$ of total sterols	3.8 %	6.8	29.1 %	1.3
Stigmasterol	\leq Campesterol ($\leq 4.0\%$ of total sterols)	1.0 %	9.0	0.6 %	45.0
Δ-7-Stigmasterol	$\leq 0.5\%$ of total sterols	not detected	-	0.7 %	2.9
Uvaol + Erythrodiol	$\leq 4.5\%$ of total sterols	1.8 %	31	0.3 %	1.0
Total Sterols	≥ 1000 mg/kg	1324 mg/kg	6	4221 mg/kg	1.0

*Apparent β -sitosterol = β -sitosterol + Δ -5-avenasterol + Δ -5,23-stigmastadienol + clerosterol + sitostanol + Δ -5,24-stigmastadienol. Total sterols = cholesterol + 24-methylene cholesterol + brassicasterol + campesterol + campestanol + stigmasterol + Δ -7-campesterol + Δ -5,23-stigmastadienol + apparent β -sitosterol + Δ -7-avenasterol.

Clean-up Dirty Samples Better

Eliminate phospholipids to reduce areas of ion suppression

Experimental Conditions

LC Conditions

Using a 50 x 2.1 Kinetex® 2.6µm C18 LC Column (Part No.: 00B-4426-AN), and a mobile phase of 0.1% Formic acid in water (Mobile Phase A) and 0.1% Formic acid in Acetonitrile (Mobile Phase B), A ballistic gradient was run from 60% → 100% of Mobile Phase B over one minute and then held at 100% organic for 5 minutes at a flow rate of 0.3 mL/min.

Sample Pre-treatment

Dilute 100µL of spiked plasma (100 ng/mL) with 100µL of IPA/ Water (1:1) and add 10µL of 1 µg/mL standard in Ethanol.

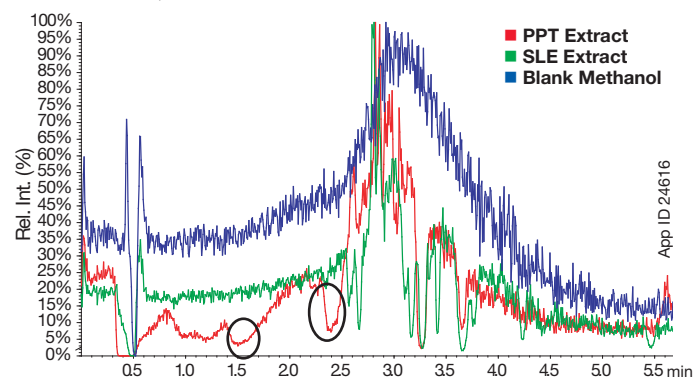
SLE Protocol

96-Well Plate:	Strata® DE SLE 200 µL 96-Well Plate
Part No.:	8E-S325-FGB
Load:	200µL Pre-treated sample on to the Strata DE plate (apply vacuum or positive pressure to pull/push sample into sorbent)
Wait:	5 minutes
Elute:	2x 0.6mL Heptane. Vacuum or apply positive pressure at 5-10" Hg for 10 seconds
Dry down:	Evaporate eluent to dryness at 30 °C under a gentle stream of Nitrogen
Reconstitute:	100µL of Methanol/Water (80:20) with internal standard

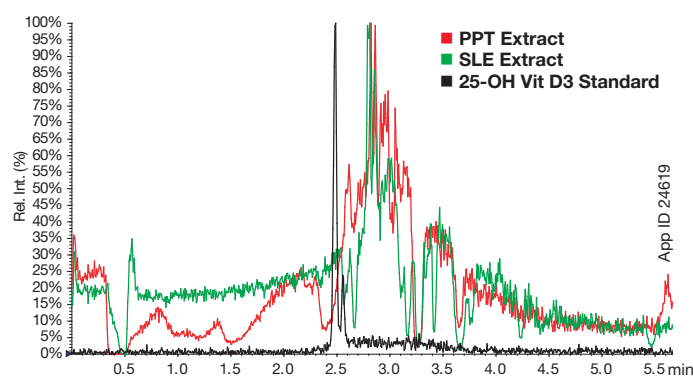
Protein Precipitation (PPT) Protocol

96-Well Plate:	Impact™ Protein Precipitation 2 mL square well filter plate
Part No.:	CE0-7565
Add:	800 µL of Acetonitrile/Methanol (1:1) with 0.1% Formic acid
Dispense:	200 µL of plasma with spiked 25-OH Vitamin D2/ D3 Internal Standard on to the Impact Protein Precipitation plate
Vortex:	2 minutes
Wait:	5 minutes
Elute:	Apply vacuum or positive pressure at 5-10" Hg to pull sample through the Impact PPT 96-Well Plate and into a collection plate

Normalized Comparison of Blank Methanol, SLE Extract, and PPT Extract



Overlay Comparison of PPT, SLE, and 25-OH Vitamin D3 Standard

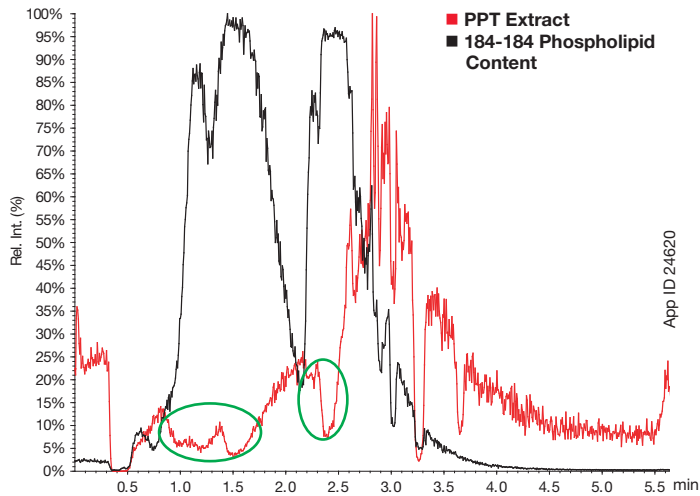


Significant areas of suppression in PPT sample where vitamin D3 elutes.



Clean-up Dirty Samples Better *cont'd*

Phospholipid Profile Overlay Compared to PPT

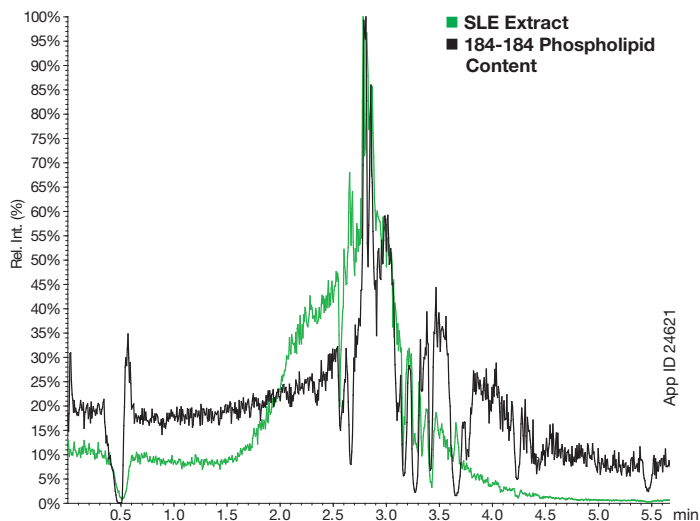


Recovery Values of 25-OH Vitamin D2/D3 Using a Heptane Elution Solvent

	25-OH Vitamin D2	25-OH Vitamin D3
Recovery	96 %	84 %
RSD (n=8)	9 %	9 %

SLE extraction using Strata® DE SLE with heptane as the extraction solvent can minimize ion suppression regions associated with phospholipids that are not removed when performing a simple protein precipitation.

Phospholipid Profile Overlay Compared to SLE



Learn more about Strata DE
www.phenomenex.com/StrataDE



Rely on the Right Extraction Solvents

Optimize non-oxygenated solvents (heptane, hexane, dichloromethane) for high recoveries.

Recommended Elution Solvents



Pre-treatment

Dilute 100 μ L of spiked plasma (125 ng/mL) with 200 μ L of Water.

SLE Protocol

96-Well Plate:	Strata [®] DE 400 μ L 96-Well Plate
Part No.:	8E-S325-5GB
Load:	300 μ L treated sample onto plate (apply vacuum or positive pressure to pull/push sample into sorbent) if necessary
Wait:	5 minutes
Elute:	3x 600 μ L Dichloromethane (DCM) or 3x 600 μ L Ethyl Acetate
Apply:	Vacuum or apply positive pressure at 5-10" Hg for 10 seconds
Dry:	Sample under slow stream of Nitrogen at 30 °C
Reconstitute:	200 μ L Acetonitrile/Water (20:80)

Liquid-liquid extraction methods can be easily adapted to Strata DE.

Interested in our Synthetic SLE option, visit www.phenomenex.com/novum

Recovery Values and % CVs

Analytes	Dichloromethane		Ethyl Acetate	
	% Recovery	% RSD (n=4)	% Recovery	% RSD (n=10)
β-Methasone	92	4	98	6
Cortisone	96	10	96	8
Coritcosterone	92	3	74	10
Cortisone Acetate	90	12	112	12
Triamcinolone	13	8	92	9
Prednisone	94	7	93	10
Testosterone	95	5		

*Testosterone was not extracted using Ethyl Acetate

Ordering Information

With two SLE sorbent options to choose from we guarantee* that our products will work as good or better than your current SLE products. Try it for yourself!



Synthetic SLE



Novum 96-Well Plates

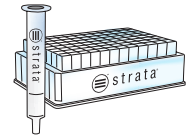
Part No.	Description	Unit
8E-S138-FGA	Novum SLE MINI 96-Well Plate	1/pk
8E-S138-5GA	Novum SLE MAX 96-Well Plate	1/pk

Novum Tubes

Part No.	Description	Unit
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



Diatomaceous Earth SLE



Strata DE 96-Well Plates

Part No.	Description	Unit
8E-S325-FGB	Strata DE SLE 200 µL 96-Well Plate	2/pk
8E-S325-5GB	Strata DE SLE 400 µL 96-Well Plate	2/pk

Strata DE Tubes

Part No.	Description	Unit
8B-S325-KDG	Strata DE SLE 12 cc Tubes	20/pk
8B-S325-VFF	Strata DE SLE 60 cc Tubes	16/pk



* If Phenomenex 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.



Presston 100 Positive Pressure Manifold

Part No.	Description	Unit
AHO-9334	Presston 100 Positive Pressure Manifold, 96-Well Plate	ea
AHO-9342	Presston 100 Positive Pressure Manifold, 1 mL Tube Complete Assembly	ea
AHO-9347	Presston 100 Positive Pressure Manifold, 3 mL Tube Complete Assembly	ea
AHO-9343	Presston 100 Positive Pressure Manifold, 6 mL Tube Complete Assembly	ea

Presston 100 Tube Adapter Kits (for AHO-9334)

The Presston 100 96-Well Positive Pressure Manifold can also process 1, 3, and 6 mL tubes using the following adapter kits:

Part No.	Description	Unit
AHO-9344	1 mL Tube Adapter Kit	ea
AHO-9345	3 mL Tube Adapter Kit	ea
AHO-9346	6 mL Tube Adapter Kit	ea



Vacuum Manifolds

Part No.	Description	Unit
AHO-6023	12-Position Tube Vacuum Manifold Set	ea
AHO-6024	24-Position Tube Vacuum Manifold Set	ea
AHO-8950	96-Well Plate Manifold, Universal with Vacuum Gauge	ea



Phenomenex warrants that for a period of 12 months following delivery, the Presston 100 Positive Pressure Manifold you have purchased will perform in accordance with the published specifications and will be free from defects in materials or workmanship. In the event that the Presston 100 Positive Pressure Manifold does not meet this warranty, Phenomenex will repair or replace defective parts. Please visit www.phenomenex.com/Presston for complete warranty information.



Strata DE

Supported Liquid Extraction



Cost effective alternative to other diatomaceous earth SLE products

Terms & Conditions

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Novum is patent pending.

Comparative separations may not be representative of all applications.

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