

iPhree™

Phospholipid Removal Solutions



Phree of Phospholipids

Phree of Protein

Phree of Method Development

 **phenomenex**[®]
...breaking with traditionSM

One Quick Method, Three Big Advantages

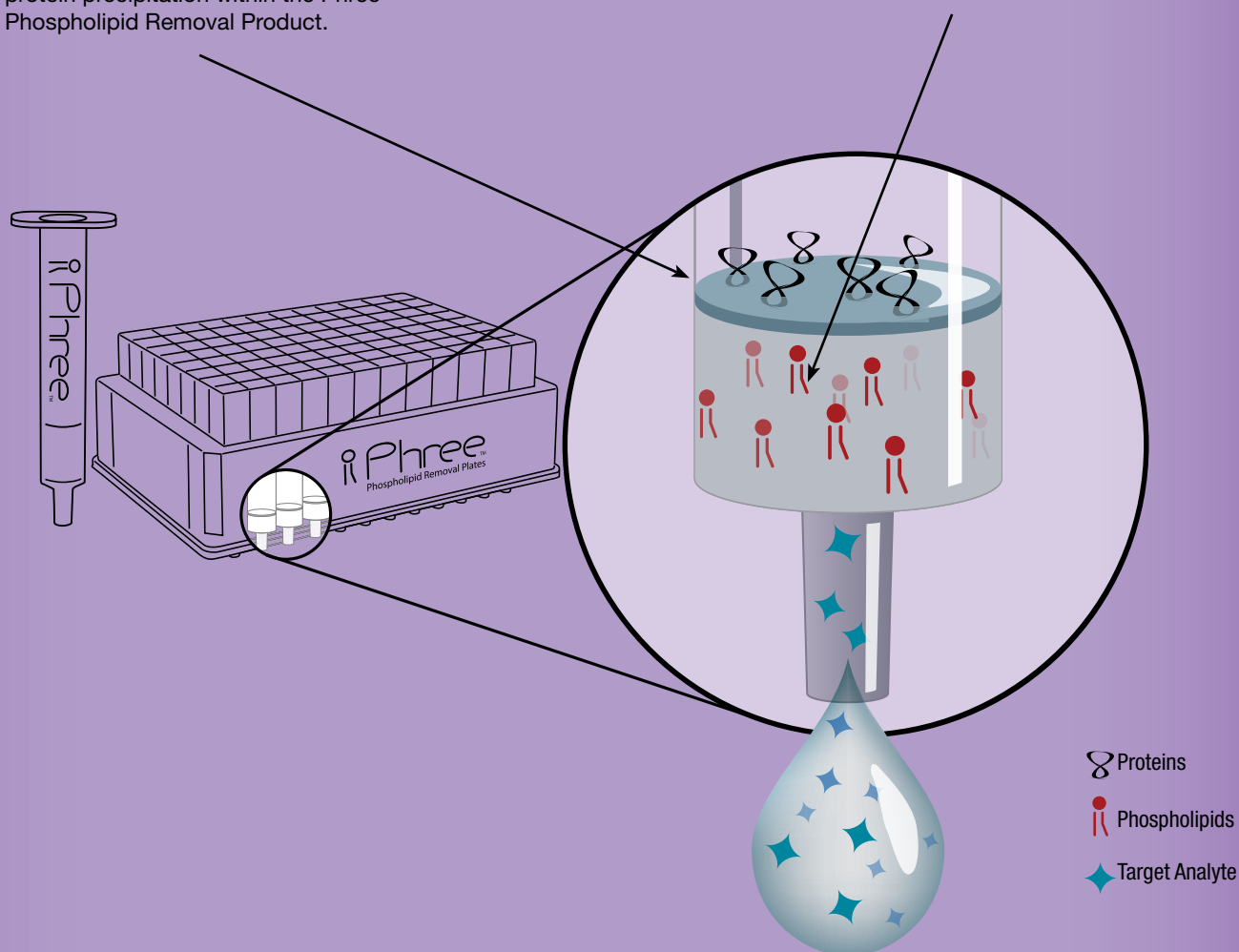
- 1** Remove Proteins that can clog HPLC columns
- 2** Eliminate Phospholipids that cause ion suppression and increase your column lifetime!
- 3** No Method Development; one method for acids, bases, and neutrals

Remove Proteins

Solvent Shielding Technology™ prevents dripping of organic solvent, allowing for protein precipitation within the Phree Phospholipid Removal Product.

Eliminate Phospholipids

The Phree sorbent selectively removes phospholipids from precipitated plasma samples.



© 2013 Phenomenex, Inc. All rights reserved.

Be Phree of Phospholipids and Proteins

“We have demonstrated that Phree Phospholipid Removal Plates resulted in >98 % decrease in the peak area of the six phospholipids we monitored in rat plasma compared to traditional protein crash. We highly recommend the use of these plates for high throughput LC-MS/MS bioanalytical sample preparation.”

Nina Khoshaba
WIL Research



3 Steps Above Traditional Protein Precipitation	pp. 4-5
An Improved Phospholipid Removal Solution	pp. 6-7
Phree Yourself of Method Development	pp. 8-9
Technical Support	p. 10
Ordering Information	p. 11

3 Steps Above Traditional Protein Precipitation

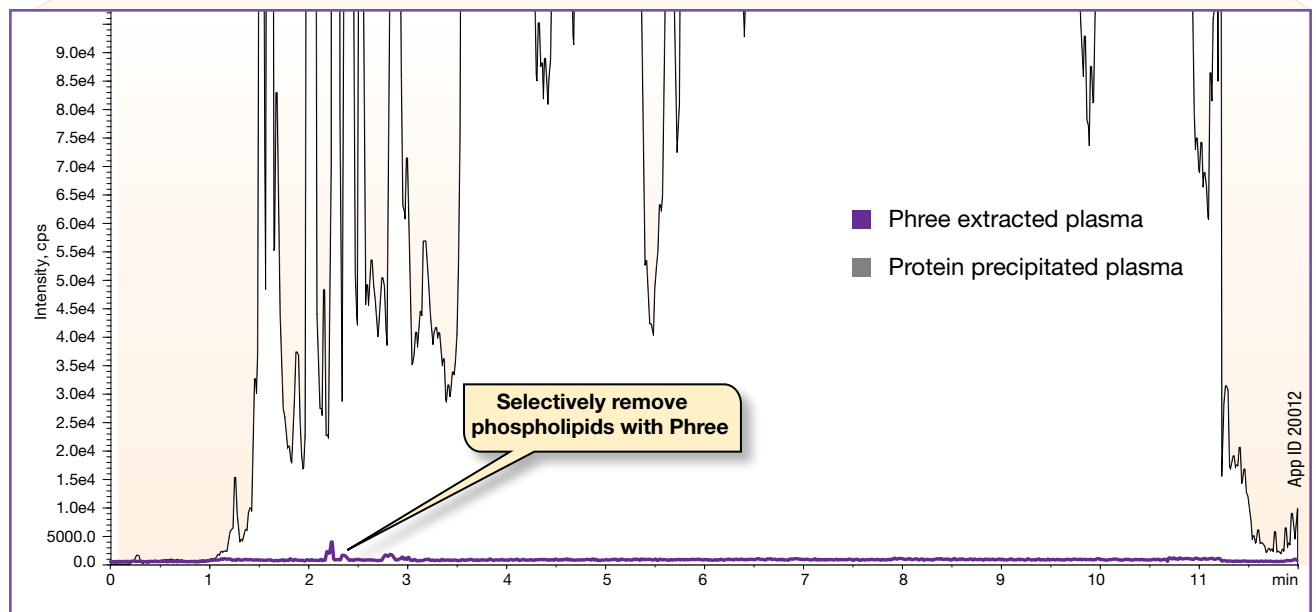
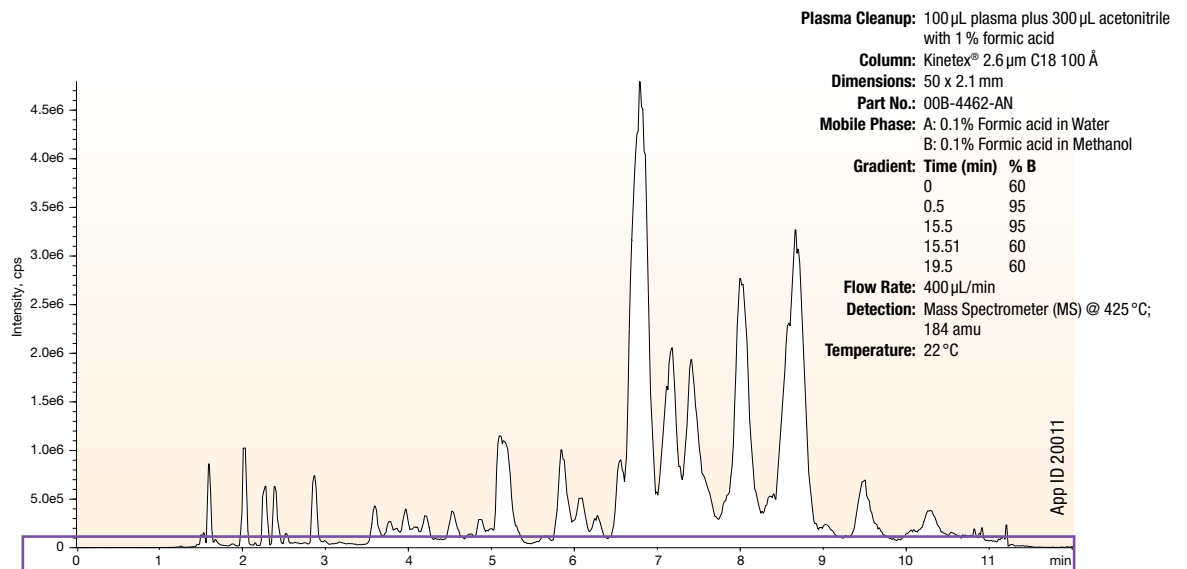
1. Protein Precipitation Does Not Remove Phospholipids

Endogenous phospholipids are a primary source of ion suppression and resulting matrix effects in bioanalytical LC/MS work. Ion suppression caused by the presence of phospholipids can result in:

- irreproducible results
- quantitation issues
- loss in method sensitivity
- matrix to matrix bias

Total Phospholipid Profile

Protein Precipitation vs. Phree™ Phospholipid Removal Products

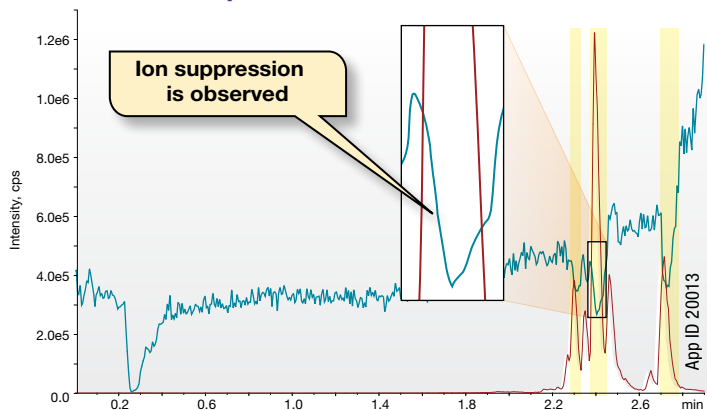


Phospholipid profile monitored using m/z 184-184

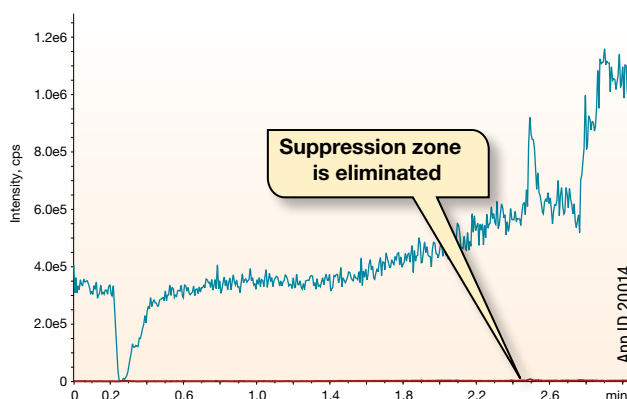
2. Reduce Ion Suppression

The presence of phospholipids in plasma samples produces zones of ion suppression that correlate exactly with the phospholipid elution profile when analyzed via mass spectrometer (MS).

Protein Precipitated Plasma



Phree Extracted Plasma



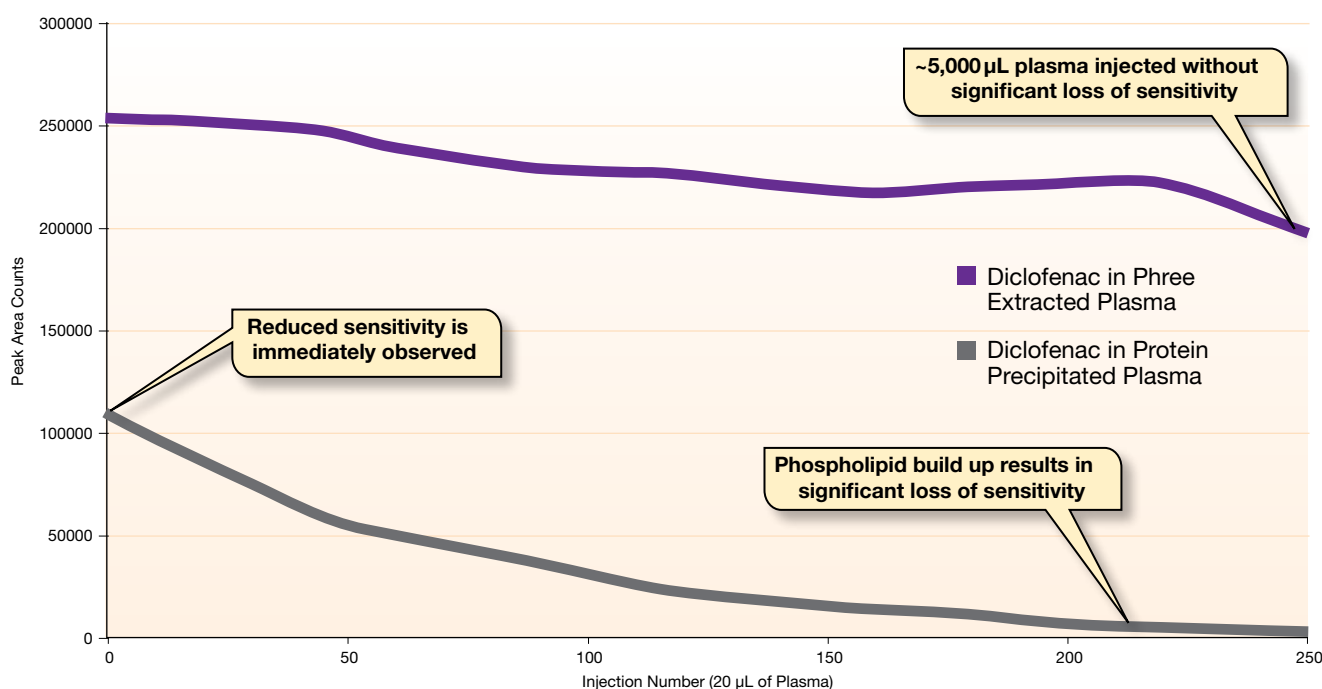
- Suppression Zone
- Phospholipids *m/z* 184-184
- Amoxapine *m/z* 314-271

Amoxapine was infused post-column to establish an ion suppression/enhancement profile with both protein precipitated plasma (left) and Phree extracted plasma (right), showing that Phree can successfully reduce ion suppression.

3. Maximize Sensitivity and Column Lifetime

Phospholipids reduce the sensitivity of the MS signal and shorten column lifetime when they build up over time.

Column Sensitivity after 250 Injections

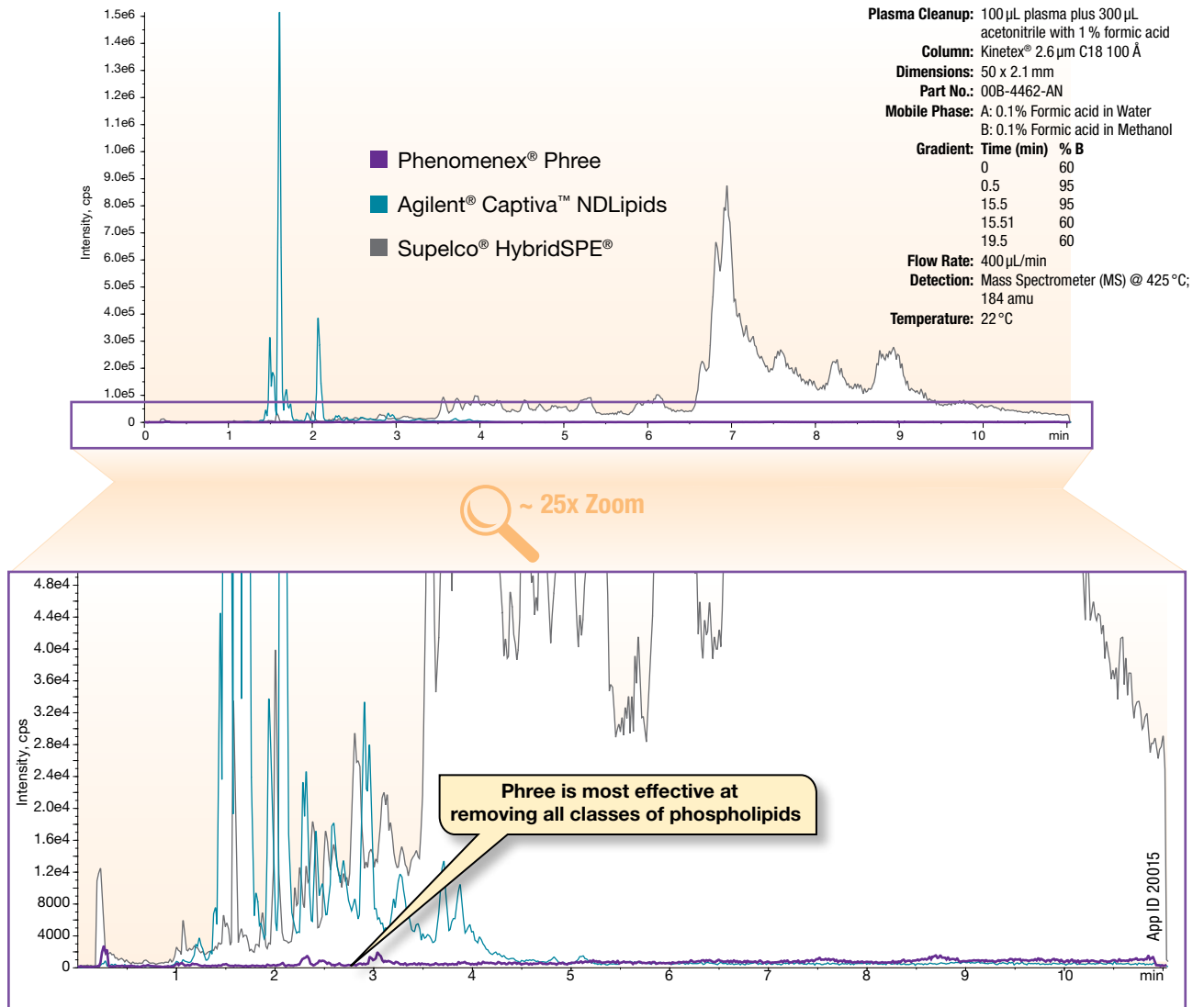


To assess the effect of phospholipid build up, repetitive 20 µL injections of diclofenac in protein precipitated plasma versus diclofenac in Phree extracted plasma were made.

An Improved Phospholipid Removal Solution

Remove All Classes of Phospholipids

Lysophosphatidylcholines and phosphatidylcholines both contribute to matrix effects. Remove all classes of phospholipids using Phree™ Phospholipid Removal Products.

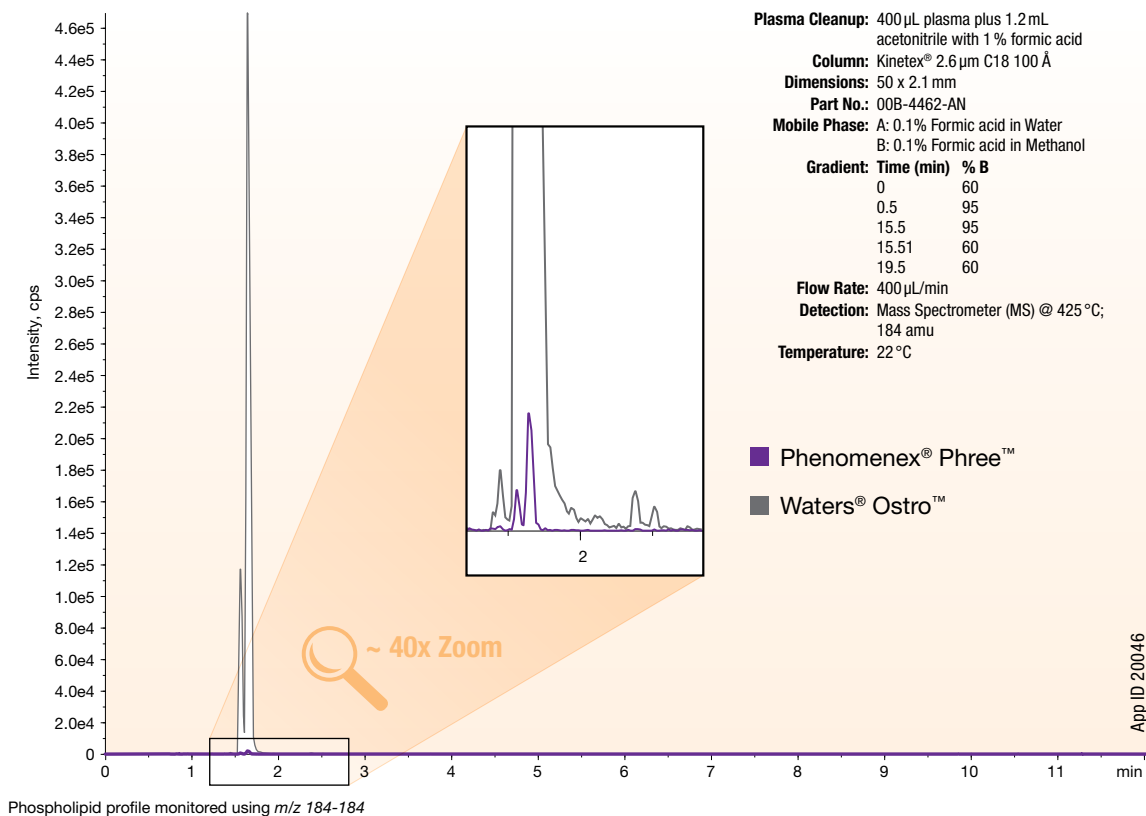


Phospholipid profile monitored using m/z 184-184

Agilent is a registered trademark of Agilent Technologies Inc. Captiva is a trademark of Agilent Technologies, Inc. Supelco and HybridSPE are registered trademarks of Sigma-Aldrich Co. Comparative separations may not be representative of all applications.

Extended Phospholipid Capacity

The Phree sorbent has an extended capacity for phospholipids, allowing you to load up to 400 µL of plasma without significant breakthrough of phospholipids.



Waters Corporation states that the true maximum recommended plasma volume that can be processed using the Ostro plate is 350 µL due to well volume limitations. Ostro is a trademark of Waters Corporation. Comparative separations may not be representative of all applications.

Phree Yourself of Method Development

One Method for Acids, Bases, and Neutrals

1. Dispense

Plasma into the Phree tube or 96-well plate.

2. Add

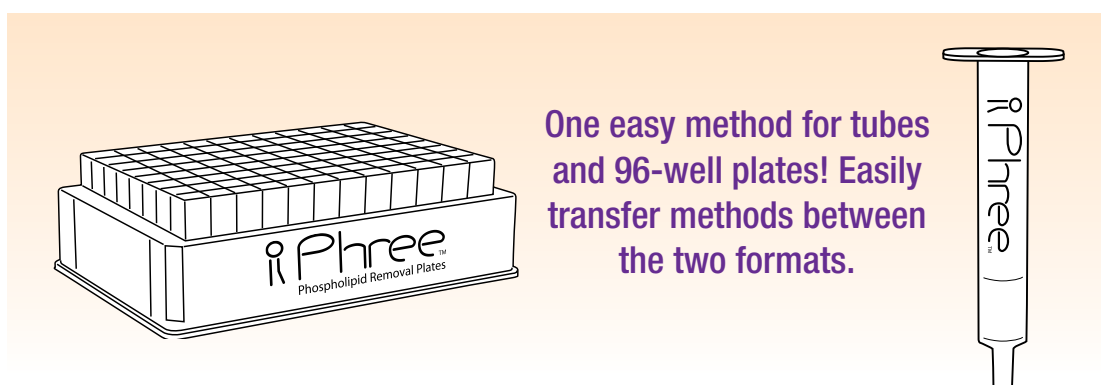
Organic solvent directly into the plasma sample.

3. Mix

4. Filter

Using a centrifuge, vacuum manifold, or positive pressure system.

For complete method details and optimization tips, visit www.phenomenex.com/Phree



Recommended Organic Solvents

Solvent	Solvent Volume	Plasma Volume
Acetonitrile with 1 % Formic acid	300 μ L	100 μ L
Methanol with 1 % Formic acid	400 μ L	100 μ L

Recommended Plasma Loading Capacities

Format	Volume
96-well plates	25 - 400 μ L
Tubes	25 - 200 μ L

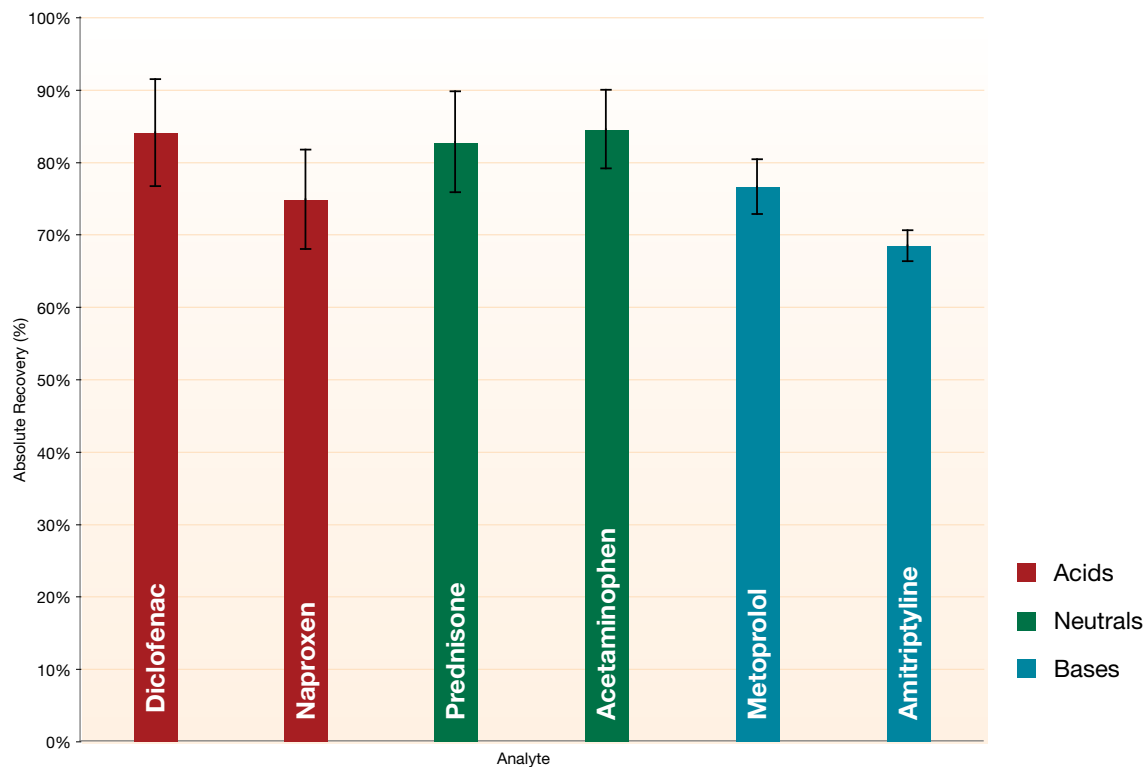
Tip

Phenomenex accessories pair perfectly with Phree Phospholipid Removal Products. Go to page 11 for a complete list of accessories.

High Recoveries of Target Analytes

The Phree general protocol has been developed to produce high recoveries of acids, bases, and neutrals while simultaneously removing all classes of phospholipids.

Absolute Recoveries of Acids, Bases, and Neutrals



Recovery data was obtained by calculating the average absolute recoveries of analytes extracted from 3 Phree plates.



Sample Preparation Specialists are Ready to Assist You

Two Levels of Method Development Support

Level 1

Contact one of our dedicated sample preparation specialists for immediate method development assistance.



Level 2

Send your sample to our analytical services group for custom method development. Visit www.phenomenex.com/PhenoLogix for more information.



Get Started

Contact your Sample Preparation Specialist:

By phone: **310-212-0555**

By email: **Support@phenomenex.com**

“Phenomenex’s prompt support is very important for us to achieve our work. I thank them for their persistent support and innovative products.”

Allena Ji
Wyeth

Order Phree Now!



Ordering Information

Phree Phospholipid Removal Products

Part No.	Description	Unit	Price
8B-S133-TAK	Phree Phospholipid Removal 1 mL Tube	100/box	\$184
8E-S133-TGB	Phree Phospholipid Removal 96-Well Plates	2/box	366

Accessories

Collection Plates (deep well, polypropylene)

AHO-7192	Strata® 96-Well Collection Plate 350 µL/well	50/pk	\$ 250
AHO-7193	Strata 96-Well Collection Plate 1 mL/well	50/pk	250
AHO-7194	Strata 96-Well Collection Plate 2 mL/well	50/pk	290
AHO-8635	Strata 96-Well Collection Plate, 2 mL Square/Round-Conical	50/pk	290
AHO-8636	Strata 96-Well Collection Plate, 2 mL Round/Round, 8 mm	50/pk	321
AHO-7279	Strata 96-Well Collection Plate, 1 mL/well Round, 7 mm	50/pk	210

Sealing Mats

AHO-8597	Sealing Mats, Pierceable, 96-Square Well, Silicone	50/pk	\$ 255
AHO-8598	Sealing Mats, Pre-Slit, 96-Square Well, Silicone	50/pk	280
AHO-8631	Sealing Mats, Pierceable, 96-Round Well 7 mm, Silicone	50/pk	255
AHO-8632	Sealing Mats, Pre-Slit, 96-Round Well 7 mm, Silicone	50/pk	280
AHO-8633	Sealing Mats, Pierceable, 96-Round Well 8 mm, Silicone	50/pk	255
AHO-8634	Sealing Mats, Pre-Slit, 96-Round Well 8 mm, Silicone	50/pk	280
AHO-7362	Sealing Tape Pad	10/pk	109

Vacuum Manifolds

AHO-6023*	SPE 12-Position Vacuum Manifold Set, for tubes	ea	\$ 634
AHO-6024*	SPE 24-Position Vacuum Manifold Set, for tubes	ea	874
AHO-8950	Strata 96-Well Plate Manifold, Universal with Vacuum Gauge	ea	1,109

*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.

guarantee

If Phree Phospholipid Removal products do not perform as well or better than your current phospholipid removal product, send in your comparative data within 45 days and keep the Phree Phospholipid Removal product for FREE.

Tip

For more information about Phenomenex sample preparation products, visit www.phenomenex.com/sampleprepinfo



Terms and Conditions

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

Trademarks

Strata and Kinetex are registered trademarks of Phenomenex. Phree and Solvent Shielding Technology are trademarks of Phenomenex. Agilent is a registered trademark, and Captiva is a trademark of Agilent Technologies, Inc. Supelco and HybridSPE are registered trademarks of Sigma-Aldrich Co. Waters is a registered trademark, and Ostro is a trademark of Waters Corporation.

Disclaimer

Phenomenex is in no way affiliated with Agilent Technologies, Sigma Aldrich, or Waters Corporation. Comparative separations may not be representative of all applications. The opinions stated herein are solely those of the speaker and not necessarily those of any company or organization.

© 2013 Phenomenex, Inc. All rights reserved.



Phospholipid Removal Solutions



PRSRST STD
U.S. POSTAGE
PAID
TORRANCE, CA
PERMIT NO. 185

Australia

t: 02-9428-6444
f: 02-9428-6445
auinfo@phenomenex.com

Austria

t: 01-319-1301
f: 01-319-1300
anfrage@phenomenex.com

Belgium

t: 02 503 4015 (French)
t: 02 511 8666 (Dutch)
f: +31 (0)30-2383749
beinfo@phenomenex.com

Canada

t: (800) 543-3681
f: (310) 328-7768
info@phenomenex.com

Denmark

t: 4824 8048
f: +45 4810 6265
nordicinfo@phenomenex.com

Finland

t: 09 4789 0063
f: +45 4810 6265
nordicinfo@phenomenex.com

France

t: 01 30 09 21 10
f: 01 30 09 21 11
franceinfo@phenomenex.com

Germany

t: 06021-58830-0
f: 06021-58830-11
anfrage@phenomenex.com

India

t: 040-3012 2400
f: 040-3012 2411
indiainfo@phenomenex.com

Ireland

t: 01 247 5405
f: +44 1625-501796
eireinfo@phenomenex.com

Italy

t: 051 6327511
f: 051 6327555
italiainfo@phenomenex.com

Luxembourg

t: +31 (0)30-2418700
f: +31 (0)30-2383749
nlinfo@phenomenex.com

Mexico

t: 001-800-844-5226
f: 001-310-328-7768
tecnicomx@phenomenex.com

The Netherlands

t: 030-2418700
f: 030-2383749
nlinfo@phenomenex.com

New Zealand

t: 09-4780951
f: 09-4780952
nzinfo@phenomenex.com

Norway

t: 810 02 005
f: +45 4810 6265
nordicinfo@phenomenex.com

Puerto Rico

t: (800) 541-HPLC
f: (310) 328-7768
info@phenomenex.com

Sweden

t: 08 611 6950
f: +45 4810 6265
nordicinfo@phenomenex.com

United Kingdom

t: 01625-501367
f: 01625-501796
ukinfo@phenomenex.com

United States

t: (310) 212-0555
f: (310) 328-7768
info@phenomenex.com

**All other countries:
Corporate Office USA** 

t: (310) 212-0555
f: (310) 328-7768
info@phenomenex.com



www.phenomenex.com

Phenomenex products are available worldwide. For the distributor in your country, contact Phenomenex USA, International Department at international@phenomenex.com

411 Madrid Avenue
Torrance, CA 90501-1430
USA