

# Labs Across the World Are Advancing Their Protein Precipitation



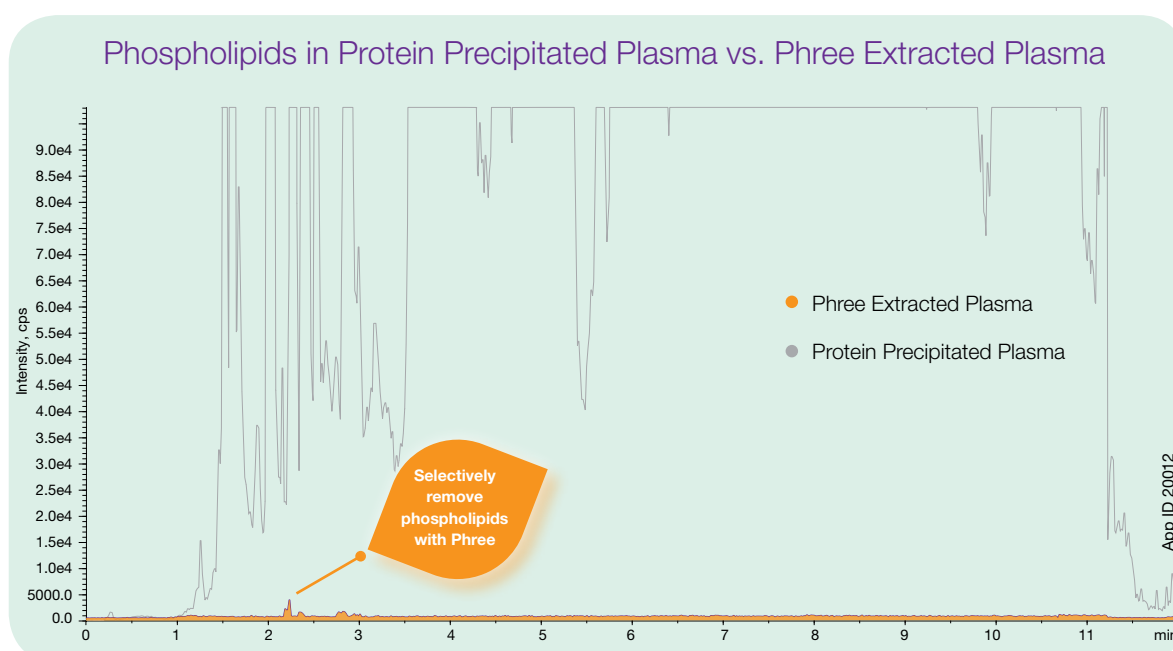
Achieve Cleaner Samples  
Extend HPLC Column Lifetime  
Improve Analyte Sensitivity  
Reduce Mass Spec Maintenance

# What is Protein Precipitation Doing to Your Analysis?

Phospholipids left in your sample after protein precipitation will decrease your HPLC/UHPLC column lifetime and will reduce analyte sensitivity due to build-up on your column. Increased mass spec maintenance will also be required as phospholipids build up on the mass spec source.



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.



Phospholipid profile monitored using m/z 184-184.

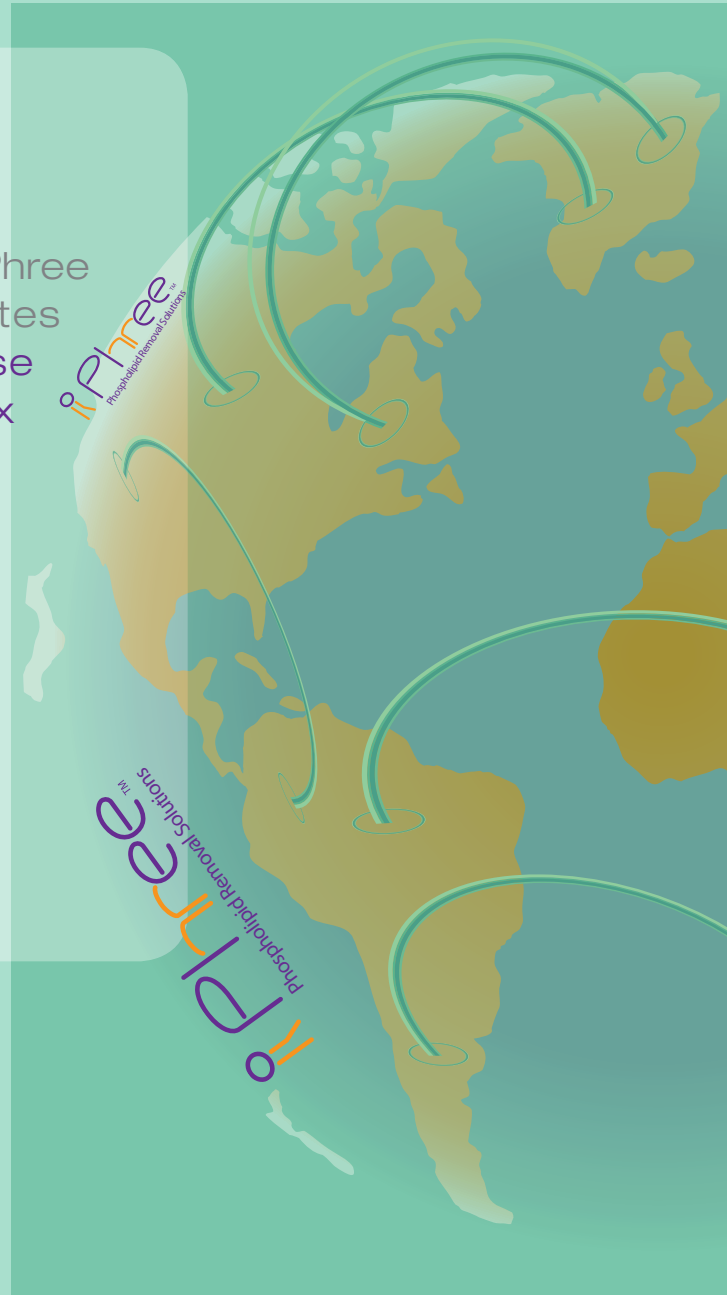
## Cleaner than Protein Precipitation

“

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, USA*

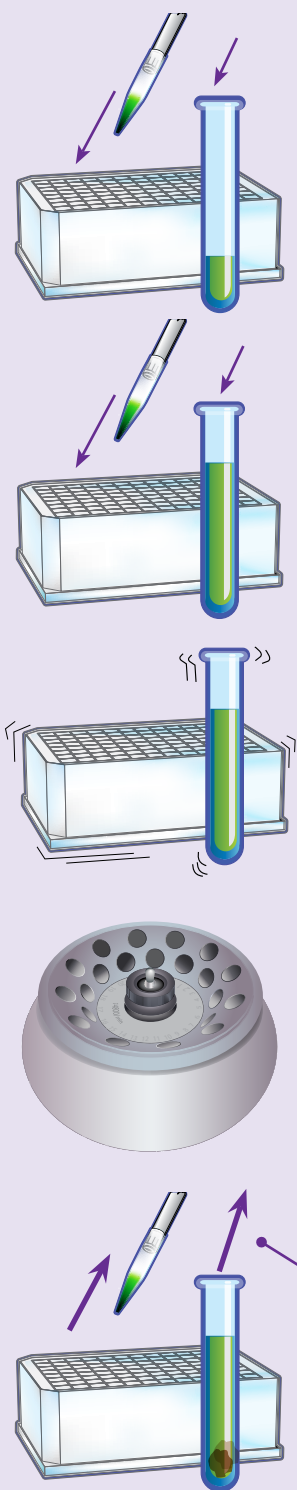


# Cleaner Samples in 4 Steps

The Phree protocol is essentially the same as a traditional protein precipitation and can be used to analyze basic, acidic, and neutral compounds.

## Protein Precipitation

In Tube or Collection Plate



1

Add Plasma

2

Add Organic Solvent  
+ 1% Formic Acid

3

Mix

4

Centrifuge (or apply  
positive pressure or  
vacuum for Phree)

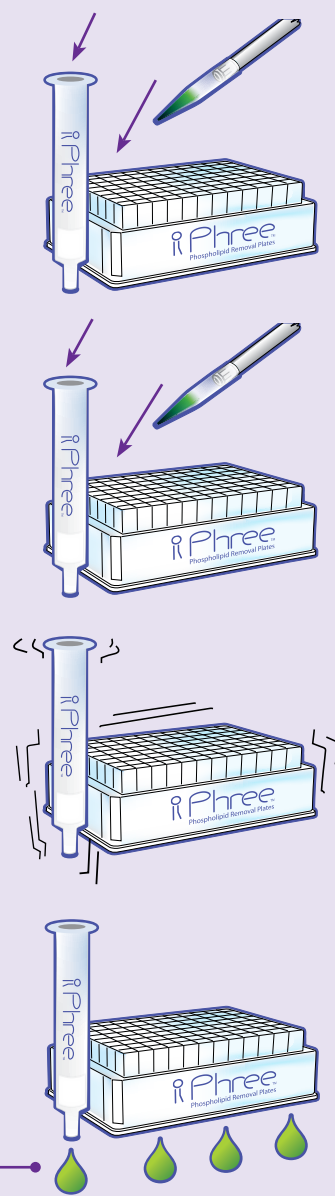
Collect Eluent

5

Collect Supernatant

## Phree

1 mL Tube or 96-Well Plate



No additional  
steps required

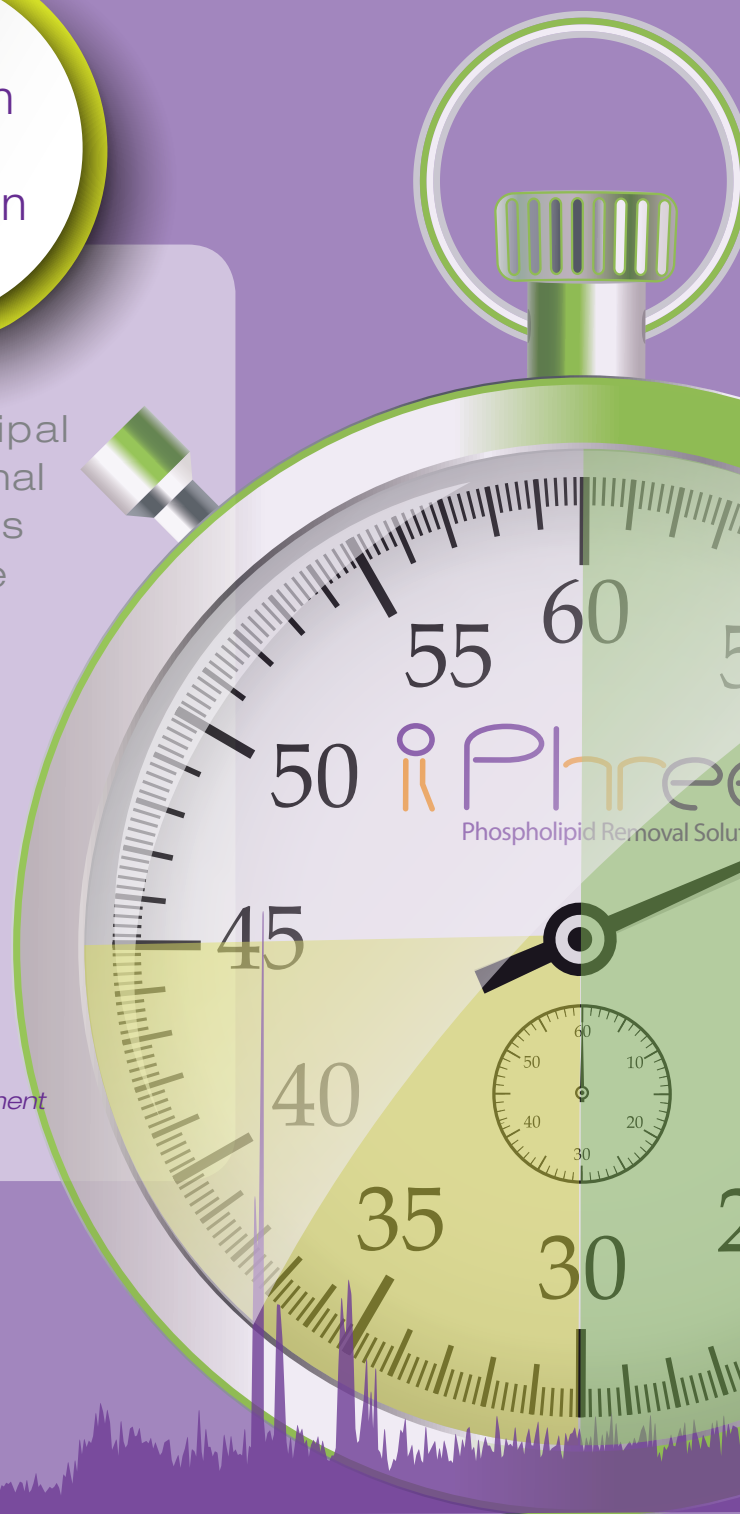
For optimization tips, videos, FAQ's and more, visit  
[www.phenomenex.com/Phree](http://www.phenomenex.com/Phree)

## Easier than Protein Precipitation

“

In our case, the principal advantage over traditional protein precipitation is the retention of the phospholipids which compromised the extraction yield of our hydrophobic analytes and most of all our internal standard. I can confirm that the procedure is very simple to use.

”  
*Angelo Paci,  
Pharmacology and Drug Analysis Department  
Gustave Roussy Grand Paris, France*



## Advance Your Protein Precipitation. 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	
8E-S133-TGB	Phree Phospholipid Removal 96-Well Plates	2/box	

#### Accessories

##### Collection Plates (deep well, polypropylene)

AH0-7192	Strata® 96-Well Collection Plate, 350 µL/well	50/pk	
AH0-7193	Strata 96-Well Collection Plate, 1 mL/well	50/pk	
AH0-7194	Strata 96-Well Collection Plate, 2 mL/well	50/pk	
AH0-8635	Strata 96-Well Collection Plate, 2 mL Square/Round-Conical	50/pk	
AH0-8636	Strata 96-Well Collection Plate, 2 mL Round/Round, 8 mm	50/pk	
AH0-7279	Strata 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

AH0-6023*	SPE 12-Position Vacuum Manifold Set, for tubes	ea	
AH0-6024*	SPE 24-Position Vacuum Manifold Set, for tubes	ea	
AH0-8950	Strata 96-Well Plate Manifold, Universal with Vacuum Gauge	ea	

\*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-position manifold.

**guarantee**

If Phree Phospholipid Removal products do not perform as well or better than your current phospholipid removal product, return the product with your comparative data within 45 days for a FULL REFUND.



For more information about Phenomenex sample preparation products, visit

[www.phenomenex.com/sampleprepinfo](http://www.phenomenex.com/sampleprepinfo)

## We are Here to Help!

Your personal Sample Preparation Specialist is available to assist with method development, optimization, and product recommendations.

### Unparalleled Support

“

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, USA*



Contact your Sample Preparation Specialist

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