



GL Sciences

# Titansphere™ Phos-TiO MP Kit

*Efficiently Enrich **BOTH** Singly and Multiply  
Phosphorylated Peptides*

GL Sciences Inc.

## Titansphere™ Phos-TiO MP Kit

### Efficiently Enrich **BOTH** Singly and Multiply Phosphorylated Peptides

GL Sciences' is known as the best manufacturer for the enrichment/purification of phosphopeptide, which our Titansphere Phos-TiO kit and bulk resins are widely used throughout the world in major cancer research institutes and proteomics core facilities.

The new Titansphere Phos-TiO MP Kit employs a new protocol in the HAMMOC method, which enables highly efficient and selective recovery of not only singly, but also for multiply phosphorylated peptides. Specifically, the new kit fractions the singly and multiply phosphorylated peptides separately, which prevents ion suppression in LC-MS/MS detection and delivers higher recovery of multiply phosphorylated peptides.

### Features

- High Recovery of not only Singly, but also for Multiply Phosphorylated Peptides.
- All Operation is done using an Easy-To-Use Centrifuge.

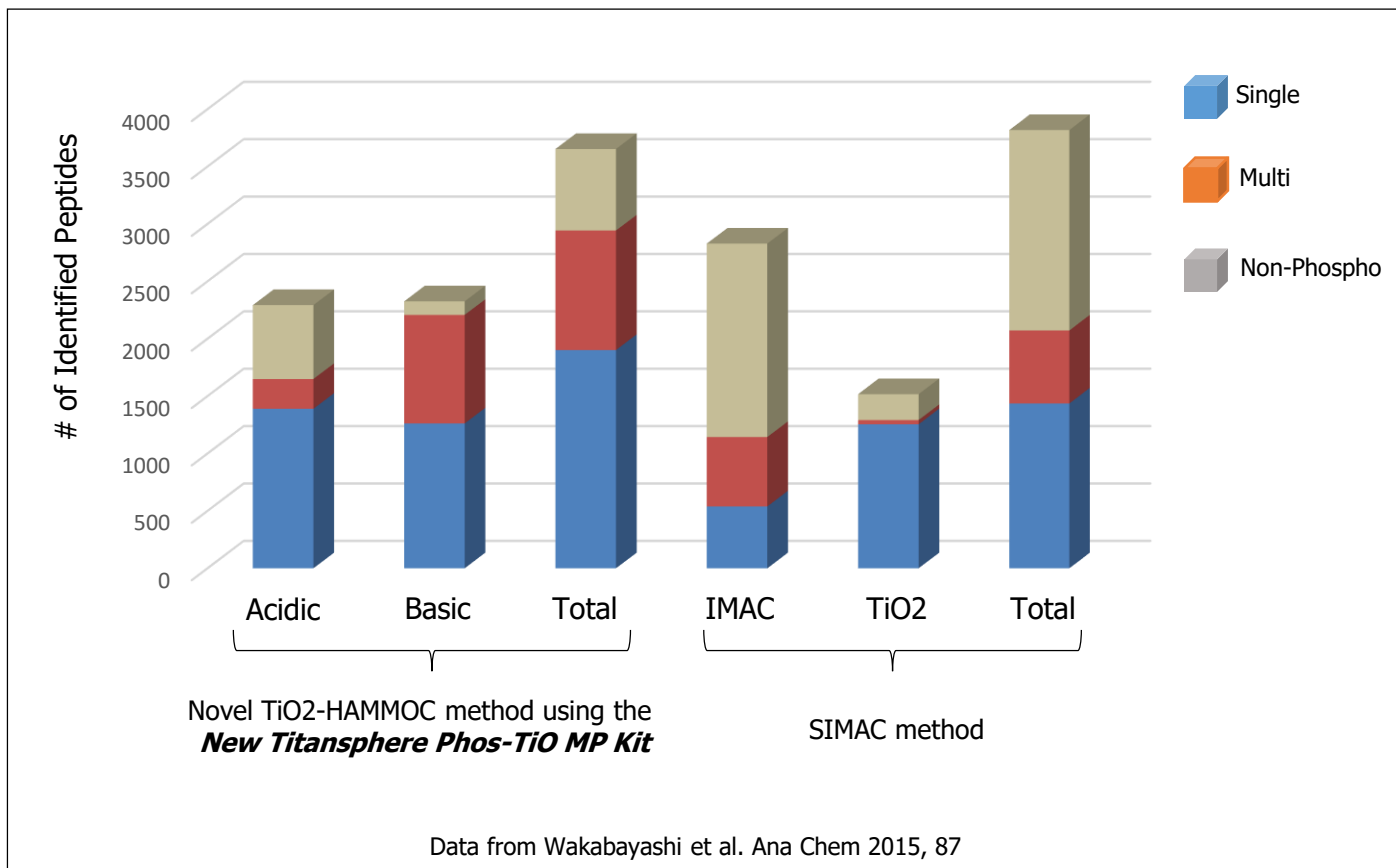
### Sample Loading Capacity

Description	Content	
Sample	Tyr(PO <sub>3</sub> H <sub>2</sub> ) - Angiotensin II	
Spin Tip Sorbent Mass/Tip Volume	1 mg/ 200 µL	3 mg/200 µL
Sample Loading Capacity	1.2 µg	3.5 µg

### Titansphere Phos-TiO MP Kit Contents

Cat. No.	5010-21282	5010-21283
Titansphere Phos-TiO MP Kit	24 pcs	24 pcs
Titansphere Sorbent Mass/Tip Volume	1 mg / 200 µL	3 mg / 200 µL
Spin Tip Quantity	24 pcs (6 x 4 packs)	24 pcs (6 x 4 packs)
Waste Fluid Tube Quantity	24 pcs	24 pcs
Recovery Tube (2.0 mL) Quantity	24 pcs	48 pcs
Recovery Tube (1.5 mL) Quantity	48 pcs	48 pcs
Solution B (Lactic acid) Quantity	2 mL	2 mL
Instruction Manual	1/pk	1/pk

**Comparison of Recovery of BOTH Singly and Multiply Phosphorylated Peptides**

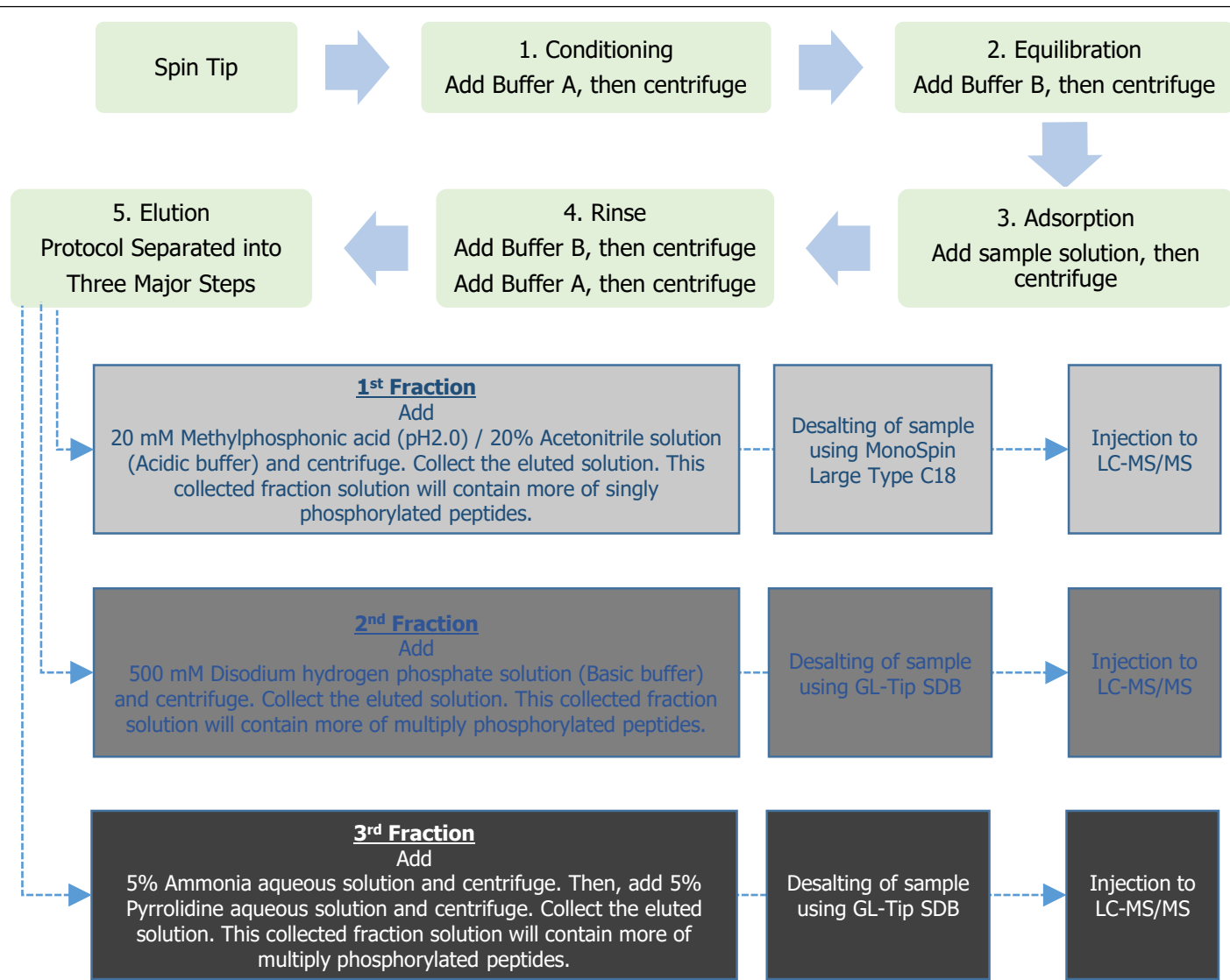


The above experiment was done using HeLa cells 100 µg to prove the new Titansphere Phos-TiO MP Kit show highly efficient recovery of both singly and multiply phosphorylated peptides compared to SIMAC (Sequential Elution from IMAC) method.

The SIMAC method is generally separated into two major protocols, which the initial enrichment and separation of mono- and multi-phosphorylated peptides uses an Immobilized Metal ion Affinity Chromatography and a subsequent enrichment of the mono-phosphorylated peptides using titanium dioxide chromatography. Finally, the two separated phosphopeptide fractions are then analyzed by LC-MS/MS.

In the new Titansphere Phos-TiO MP Kit, singly phosphorylated peptides were recovered more when using an acidic elution buffer, while the multiply phosphorylated peptides were recovered more when using a basic elution buffer. As proven above, in total, the new Titansphere Phos-TiO MP Kit recovered more of both singly and multiply phosphorylated peptides than the SIMAC method.

## Typical Enrichment Protocol using Titansphere Phos-TiO MP Kit



### Remarks:

- Buffer A, Buffer B, Methylphosphonic acid, Disodium hydrogen phosphate, Ammonia aqueous solution and 5% Pyrrolidine aqueous solution are not included in the kit due to their designation as hazardous materials for the purposes of air transportation. Therefore, the user must prepare these solutions in their lab, according to the procedure detailed in the instruction manual.
- Solution B is included in the kit, which is Lactic acid.
- The preparation procedure of Buffer A and B are as follows.

Buffer A	2% TFA solution	1mL
	Acetonitrile	4mL
	Total	5mL (Use 3mL for making Buffer B)

Buffer B	Solution B	1mL
	Buffer A	3mL
	Total	4mL

## Ordering Information

### Titansphere™ Phos-TiO MP Kit

- Centrifuge Adapter, 24 pcs/pk (Cat. No. 5010-21514) must be purchased once to use the Titansphere Phos-TiO MP Kit.
- This centrifuge adapter is reusable.
- Lactic acid is Solution B, which is already included in the kit, however, can be purchased separately for future requirements.

Description	Sorbent Mass/Tip Volume	Quantity	Cat. No.
Titansphere Phos-TiO MP Kit	1 mg / 200 µL	24 pcs	5010-21282
	3 mg / 200 µL	24 pcs	5010-21283
Centrifuge Adapter	-	24 pcs	5010-21514
Lactic acid for Titansphere Phos-TiO (This is Solution B included in the kit)	15 mL	1/pk	5010-21295

### Phos-TiO MP Kit with Desalting Columns

- These special packages includes optimized desalting columns/spin tips to be used with Phos-TiO MP Kit.

Package Contents	Package Cat. No.
Titansphere Phos-TiO MP Kit, 1mg /200 µL, 24 pcs/pk (Cat. No. 5010-21282)	5010-21272
MonoSpin Large type C18, 30 pcs/pk (Cat. No. 7510-11320)	
GL-Tip SDB, 96 pcs/pk (Cat. No. 7820-11200)	

Package Contents	Package Cat. No.
Titansphere Phos-TiO MP Kit, 3mg /200 µL, 24 pcs/pk (Cat. No. 5010-21283)	5010-21273
MonoSpin Large type C18, 30 pcs/pk (Cat. No. 7510-11320)	
GL-Tip SDB, 96 pcs/pk (Cat. No. 7820-11200)	

### Titansphere Phos-TiO Spin Tips

- Spin tips are also available separately.

Description	Sorbent Mass/Tip Volume	Quantity	Cat. No.
Titansphere Phos-TiO Spin Tips	1 mg / 200 µL	24 pcs	5010-21316
		96 pcs	5010-21317
	3 mg / 200 µL	24 pcs	5010-21307
		96 pcs	5010-21308



## Worldwide Ordering Information

### **GL Sciences, Inc. USA**

4733 Torrance Blvd. Suite 255  
Torrance, CA 90503  
Phone: 310-265-4424  
Fax: 310-265-4425  
Email: [info@glsciencesinc.com](mailto:info@glsciencesinc.com)  
Web: [www.glsciencesinc.com](http://www.glsciencesinc.com)

### **GL Sciences B.V.**

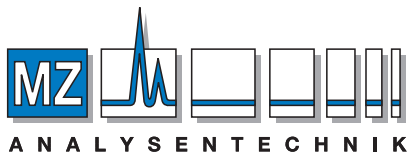
De Sleutel 9  
5652 AS Eindhoven  
The Netherlands  
Phone: +31 (0)40 254 95 31  
Email: [info@glsciences.eu](mailto:info@glsciences.eu)  
Web: [www.glsciences.eu](http://www.glsciences.eu)

### **International Distributors**

Visit our Website at  
[www.glsciences.com/distributors](http://www.glsciences.com/distributors)

### **GL Sciences, Inc. Japan**

22-1 Nishishinjuku 6-Chome  
Shinjuku-ku, Tokyo,  
163-1130, Japan  
Phone: +81-3-5323-6620  
Fax: +81-3-5323-6621  
Email: [world@gl.co.jp](mailto:world@gl.co.jp)  
Web: [www.glsciences.com](http://www.glsciences.com)



**AUTHORIZED DISTRIBUTOR**

MZ-Analysentechnik GmbH  
Barcelona-Allee 17 • D-55129 Mainz  
Tel +49 6131 880 96-0  
Fax +49 6131 880 96-20  
e-mail: [info@mz-at.de](mailto:info@mz-at.de)  
[www.mz-at.de](http://www.mz-at.de)

The specification are subject to change without notice due to continual improvements.