# Exploring the IMCSTIPS®

### AUTOMATED GLOBAL PHOSPHOPEPTIDE ENRICHMENT

#### **PRODUCT OVERVIEW**

IMCStips use a patented dispersive resin technology to enrich global phosphorylated proteins and peptides. The global enrichment of phosphoserine and phosphothreonine peptides has been successfully optimized using zirconium dioxide and PolyTi<sup>™</sup> resins inside IMCStips.

**REPRODUCIBILITY** – R-value > 0.75 between biological replicates **FLEXIBLE** – available in multiple tips sizes with multiple resin amounts **EASY TO USE** – ready-to-run workflow and robotic script available **AUTOMATION** – hands-off sample processing

### FULLY AUTOMATED METHODS AND CUSTOM SCRIPTS AVAILABLE

IMCS offers fully automated sample preparation methods using for global phosphopeptide enrichment IMCStips. Methods have been optimized and are ready for use in your process.

- 96 samples in 60 minutes
- We will send a software script package file for Hamilton systems with your tips
- Our R&D team can help develop a customized workflow
- We offer onsite confidential method development



Deck layout of the Hamilton<sup>®</sup> Microlab STAR workstation for phosphotyrosine immuno-affinity enrichment



HAMILTON CO-RE Technology

Barrier

<u>Disperser</u> Loose Resin Frit

Л

Example of IMCStips on Hamilton 96 CO-RE head.



### IMPLEMENTATION IS EASY WITH IMCStips<sup>®</sup>

- Software scripts for Hamilton Workstations
- Fully developed narratives guide you through each step
- Templated processes allow for customized workflows
- On-site technical support



## **HIGH PERFORMANCE AND CONSISTENCY**



Figure 3. The total number of phosphopeptides identified after enrichment (A) and their respective specificities for the different resin type, and automated / manual workflows (B). P, Z, and H were processed using the IMCStip using automated phosphopeptide enrichment method. SC1 and 2 were processed follow the vendors' protocol. All samples were processed in duplicates. The numbers shown are averages from duplicate runs.



The automated phosphopeptide enrichment method generates reproducible phosphorylation profiles similar or better than manual spin format methods using different resin chemistries with less handson time. Both reproducibility and automation are crucial for generating consistent profiles. These phosphorylation profiles are then compared to different disease states and healthy states to identify potential dysfunction in cellular signaling pathways.



Venn diagrams of phosphopeptide overlap from duplicate sample enrichments. The duplicate sample preparations for PolyTi (A),  $ZrO_2$  (B) and the combination of both resins in a single pipette tip (C) show an average of 76%, 78%, and 71% overlap, respectively. In comparison, the two different resins PolyTi and  $ZrO_2$  show 48% percent of overlap (D). This reduction in overlap of phosphopeptide coverage is expected for these two resin types, as the distribution of the singly-and doubly- phosphorylated peptides were also varied for the two resin types.



The different distribution of singly-, doubly- and triply- phosphorylated peptides enriched using the different resins.

#### PolyTi™

Product Description	Catalog Number Rack of 8	Catalog Number Rack of 96
5 mg resin-300 μL tips	04T-H3R73-1-5-8	04T-H3R73-1-5-96

#### ZrO<sub>2</sub>

Product Description	Catalog Number Rack of 8	Catalog Number Rack of 96
5 mg resin-300 μL tips	04T-H3R68-1-5-8	04T-H3R68-1-5-96

# imcs

integrated micro-chromatography sy

### ORDER A COMPLIMENTARY SAMPLE TODAY

- Call, email or visit **www.imcstips.com** to order a sample of Phosphopeptide Enrichment IMCStips<sup>®</sup>
- Schedule a consultation with an IMCS technical sales representative for more information.