glygen

We are glygen

Innovation leader in
micro-sample prep tools for
proteomics, genomics, and glycomics

2011 Product Catalog

Contents

For sales: +1-410-997-0301 / sales@glygen.com

Ordering information

Placing an order with Glygen is easy, and we always have a scientist on hand to answer your questions.

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We accept P.O.'s and major credit cards

The Glygen Difference

Glygen develops innovative tools to help scientists isolate, purify, and enrich target molecules.

- **Cutting-edge technologies** – Glygen's tools improve the sensitivity, specificity, and reproducibility of research
- **Established scientific authority** – Glygen tools have powered 200+ peer-reviewed publications
- **Unparalleled quality control** – every tip is made-to-order, and individually tested
- **Exceptional ability to customize** – we offer the largest spectrum of chromatographic media on market

Customization: solutions for every research need.

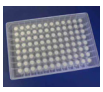
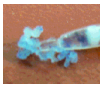
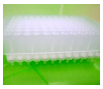
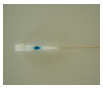
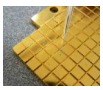
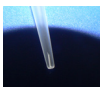
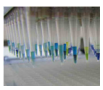
Glygen custom-develops tools to solve any proteomic, genomic, or glycomic research challenge.

All Glygen technologies are available with any of the following chromatographic media:

Silica	POROS R2	DNAPure media (Anion Exchange)
C18	POROS R3	DNAPure media (Silica-based)
C8	POROS weak anion exchanger	Protein A (Immobilized)
C4	POROS Strong Anion exchanger	Protein G (Immobilized)
CN	POROS strong cation exchanger	Lectin: ConA (Immobilized)
NH_2	HILIC	Lectin: WGA (Immobilized)
Carbon (Graphite)	PolyHYDROXYETHYL A	Borate
C18+Carbon (Graphite)	PolySULFOETHYL A (Silica SCX)	Blue Dye
Cellulose	PolyCAT A (Silica WCX)	Red Dye
ZrO_2	Silica Strong Anion (SAX)	Trypsin (Immobilized)
ZrO_2+Graphite	PolyWAX LP (Silica WAX)	Sialidase
ZrO_2+POROS	SDS Removal	G-10 (Gel Filtration)
ZrO_2+POROS+Carbon (Graphite)	Silica IMAC	G-25 (Gel Filtration)
TiO_2	POROS IMAC	G-50 (Gel Filtration)
TiO_2+Carbon (Graphite)	Ni IMAC	G-100 (Gel Filtration)
TiO_2+POROS	Fe IMAC	P-2 (Gel Filtration)
TiO_2+POROS+Carbon (Graphite)	Ca IMAC	P-4 (Gel Filtration)
TiO_2+ZrO_2	Ga IMAC	P-6 (Gel Filtration)
POROS R1	PepLink (Peptide Synthesis)	Streptavidin

Molecule	Application	Type of molecule	Media
Protein	Desalting	All	P-2, P-4, P-6
			G10, G25, G50, G100
	SDS removal	All	SDS Removal
	Tryptic digestion	All	Trypsin
	Enrichment	Phosphoprotein	TiO_2
			ZrO_2
			Ga IMAC
			Fe IMAC
			Anion Exchanger
		Immunoglobulin	Protein A
			Protein G
		His-tag protein	Silica IMAC
			Ni IMAC
		Other protein	Anion Exchanger
			Cation Exchanger
Peptide	Desalting	All	C4
			C8
			C18
			Carbon (Graphite)
			Carbon (Graphite)+C18
			HILIC
			POROS RP1
			POROS RP2
	SDS removal	All	SDS Removal
	Enrichment	Glycopeptide	Carbon (Graphite)
			HILIC
			Cellulose
			TiO_2
		Phosphopeptide	TiO_2
			ZrO_2
			Ga IMAC
			Fe IMAC
			Anion Exchanger
		Other peptide	Anion Exchanger
			Cation Exchanger
Oligo-saccharide	Desalting	All	Carbon (Graphite)
	Enrichment	Sulfated glycan	Anion Exchanger, Strong
		Sialo-glycan	Anion Exchanger, Strong
		Other oligosaccharide	TiO_2
			Carbon (Graphite)
			TiO_2
			HILIC
			Cellulose
			Borate
Small Molecule	Desalting	All	Carbon (Graphite)
	Protein removal	All	C18
	Enrichment	Hydrophobic	C18
			HILIC
		Hydrophilic	Carbon (Graphite)
			HILIC
		Neutral	Carbon (Graphite)
			C18
			HILIC
		Cationic	Cation Exchanger
		Anionic	Anion Exchanger
DNA and RNA	Desalting	All	DNAPure Media (Anion Exchange)
			DNAPure Media (Silica-based)

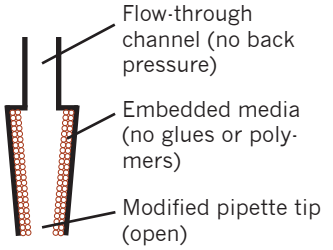
Glygen technologies overview

Technology		Description	Protein / peptide purification and desalting	Protein / peptide enrichment	Protein enzymatic digestion	Peptide synthesis
NuTip		SPE tip with embedded media (no glues, polymers)	✓ (p. 11)	✓ (p. 15)	✓ (p. 19)	
TopTip		Filterless micro-spin column with loose media	✓ (p. 12)	✓ (p. 16)	✓ (p. 19)	
Coated Plate		Media-coated 96-, 384-, or 1536-well plate	✓ (p. 13)	✓ (p. 17)	✓ (Call)	
Flow-Thru Plate		96-well packed plate for vacuum/centrifuge filtration	✓ (p. 14)	✓ (p. 18)		
iTip		Media-packed tips for any liquid handling platform	✓ (p. 38)	✓ (p. 38)		
GelCrusher		Crusher to improve digestion of proteins within gels			✓ (p. 19)	
CrashTip/ CrashPlate		High-fidelity protein precipitation of biological samples	✓ (p. 31)	✓ (p. 31)		
CapTip		Gel filtration tip+capillary for undiluted fraction separation	✓ (p. 31)	✓ (p. 31)		
HPLC Column		HPLC column for online phospho enrichment				
Trap Column		Online sample preparation tool with variety of media	✓ (p. 40)	✓ (p. 40)	✓ (p. 40)	
LC-Fiber		Coated capillary for online sample preparation	✓ (p. 41)	✓ (p. 41)		
MALDI-Pen		Continuous MALDI spotting tool with automatic flow	✓ (p. 42)	✓ (p. 42)	✓ (p. 42)	
FilterTip/ SlitTip		Filterless (or low-surface area filtered) particle separation				
Dialyzer		Unique tools for efficient and high-fidelity sample dialysis	✓ (p. 44)			
PepTip		The world's first Peptide Synthesis-in-a-Tip™				✓ (p. 20)

	Phosphopeptide enrichment	Glycoprotein/glyco-peptide enrichment	Antibody enrichment	DNA purification	Small molecule purification	Small molecule enrichment	Detergent removal	Dialysis and par-ticle filtration
NuTip	✓ (p. 21)	✓ (p. 25)	✓ (p. 27)	✓ (p. 29)	✓ (p. 32)	✓ (p. 34)	✓ (p. 37)	
TopTip	✓ (p. 22)	✓ (p. 26)	✓ (p. 27)	✓ (p. 29)	✓ (p. 32)	✓ (p. 35)	✓ (p. 37)	
Coated Plate	✓ (p. 23)	✓ (Call)	✓ (Call)		✓ (p. 33)	✓ (Call)		
Flow-Thru Plate	✓ (p. 24)	✓ (Call)	✓ (p. 28)	✓ (p. 30)	✓ (p. 33)	✓ (p. 36)		
iTip	✓ (p. 38)	✓ (p. 38)		✓ (p. 38)	✓ (p. 38)	✓ (p. 38)	✓ (p. 38)	
GelCrusher								
CrashTip/ CrashPlate				✓ (p. 31)	✓ (p. 31)			
CapTip	✓ (p. 31)	✓ (p. 31)		✓ (p. 31)	✓ (p. 31)			
HPLC Column	✓ (p. 39)							
Trap Column	✓ (p. 40)	✓ (p. 40)	✓ (p. 40)	✓ (p. 40)	✓ (p. 40)	✓ (p. 40)	✓ (p. 40)	
LC-Fiber	✓ (p. 41)	✓ (p. 41)		✓ (p. 41)	✓ (p. 41)	✓ (p. 41)	✓ (p. 41)	
MALDI-Pen	✓ (p. 42)	✓ (p. 42)	✓ (p. 42)	✓ (p. 42)	✓ (p. 42)	✓ (p. 42)	✓ (p. 42)	
FilterTip/ SlitTip								✓ (p. 45)
Dialyzer					✓ (p. 44)			✓ (p. 44)
PepTip								

NuTip™

Lab-in-a-Tip™ embedded micro-SPE cartridge



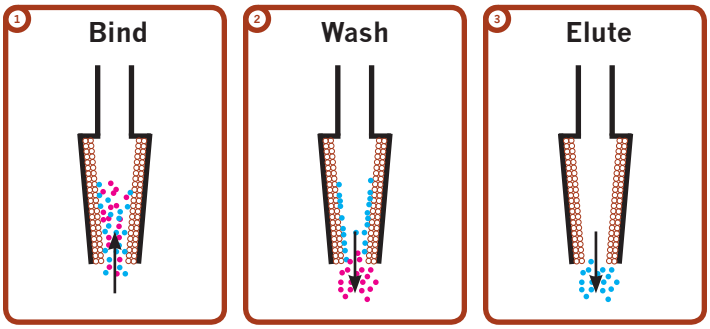
- Simple, fast sample prep with minimal loss
- Media directly embedded on inner tip wall (no glue/polymer) reduces contamination, no back pressure
- Different sizes to accommodate varying volumes/concentrations (e.g., as small as 0.1 µL volume)
- Universal fit on most pipettors

Product description

NuTip™ enables purification of low-concentration/volume samples by maximizing surface area in contact with the sample.

The chromatographic media is embedded directly in the inner surface of the tip: there are no polymers or glues. This proprietary design prevents contamination or flow problems common in competitor tips.

How it works



Unpurified sample drawn into NuTip™; target molecule binds

Impurities expelled; target molecules remain bound

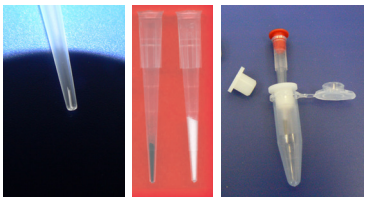
Solvent releases bound target molecules; purified sample collected

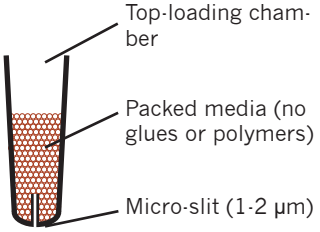
Specifications

	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
NT1	1 - 10	0.5 - 10	1 µg	30 µg
NT2	10 - 200	2 - 25	2.5 µg	75 µg
NT3	10 - 200	5 - 50	15 µg	400 µg

TopTip™

Spin-Column-in-a-Tip™ - Glygen's micro-spin column packed with media



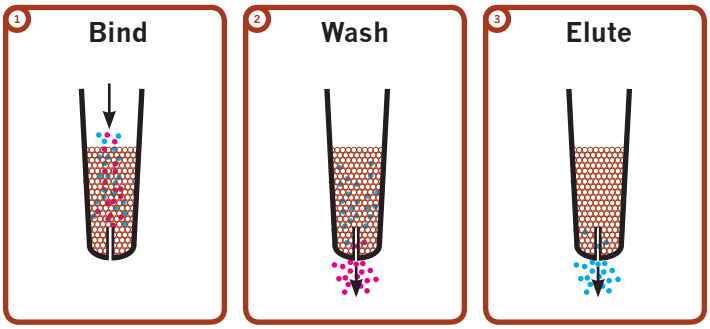


- Significantly reduce time and expense of SPE (e.g., can top-load samples and centrifuge)
- Accommodates wide spectrum of volumes and allows precise control over rates of binding and elution
- No filters, glues, or polymers: reducing sample loss and contamination risk

Product description

TopTip™ enables high-fidelity chromatographic separation of even ultra-low concentration samples. The fine 1-2 µm slit at the bottom of the TopTip™ permits liquid to pass through, but retains chromatographic media in the tip. This eliminates the need for a filter – reducing dead volume, loss of sample and contamination risk. Pressure is applied via centrifuge (adaptor included), pipette, syringe (included), or vacuum manifold (adaptor sold separately).

How it works



Sample top-loaded into TopTip™; target molecule binds packed media

Pressure (via syringe/centrifuge/vacuum) forces impurities out of slit; target bound

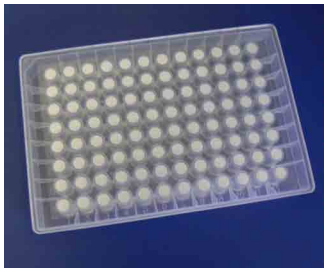
Target molecules released from media; purified sample collected

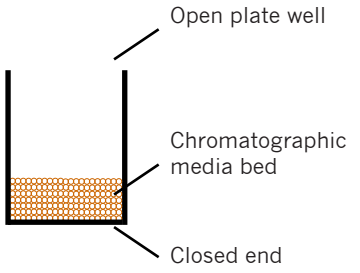
Specifications

	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
TT1	1 - 10	1 - 10	400 µg	4 mg
TT2	10 - 200	2 - 25	1000 µg	10 mg
TT3	100 - 1000	20 - 1000	5000 µg	50 mg

Lab-in-a-Plate™ Coated Plate

96-well plate coated with chromatographic media for multi-sample/automated SPE





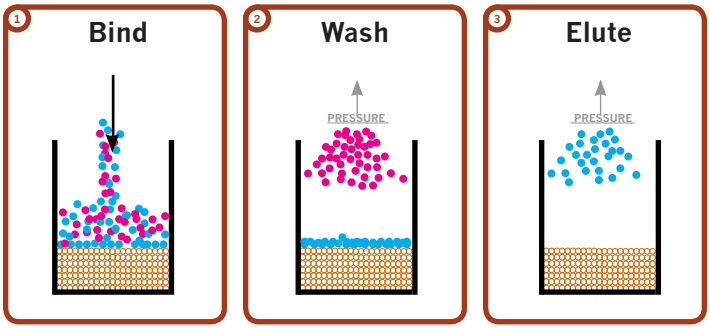
- High binding capacity relative to conventional ELISA
- Can be used with most liquid handling platforms

Product description

Lab-in-a-Plate™ Coated Plate is a patented technology for sample preparation. Lab-in-a-Plate™ Coated Plates work like ELISA plates, with chromatographic media embedded at the bottom of each well.

Coated plates are SBS standard and come in 96-, 384- and 1536-well formats. The plates are available in polypropylene (solvent resistant) or polystyrene (optically clear).

How it works



Unpurified sample loaded into well: target molecule binds media

Impurities washed out of well; target remains bound to media

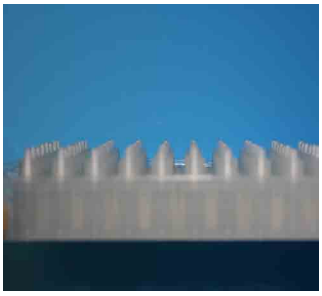
Target molecules released; purified sample collected

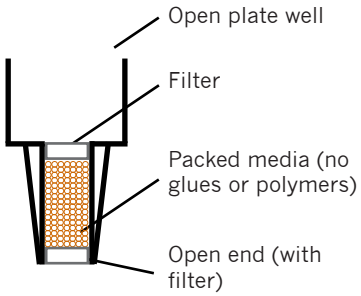
Specifications

	Material	Size	Sample volume (µL)	Binding capacity
NSS	Polystyrene	96-well	25 - 200	2 µg
NSP	Polypropylene	96-well	25 - 200	2 µg
THS	Polystyrene	384-well	10 - 70	500 ng
FES	Polystyrene	96-well	2 - 10	70 ng

Lab-in-a-Plate™ Flow-Thru Plate

96-well plates for vacuum/centrifuge flow-through chromatographic separation



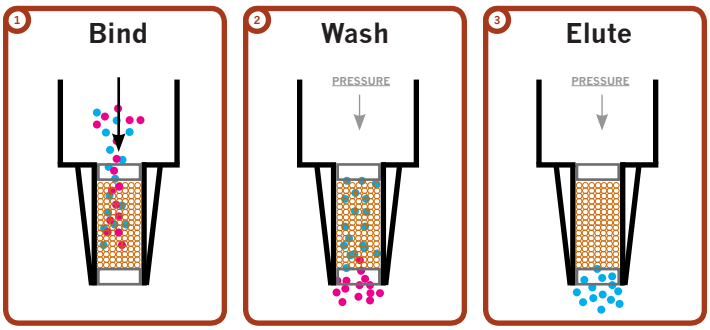


- High binding capacity coupled with one of the smallest chromatographic bed volume on the market – ideal for analysis of small sample concentrations
- Ideal for high-throughput screening applications

Product description

Glygen's Lab-in-a-Plate™ Flow-Thru Plates are the ideal equipment for vacuum/centrifuge powered SPE of small volumes of sample using various types of media (for applications like high throughput screening, drug metabolite analysis, etc). The Flow-Thru Plate's unique design allows sample to flow from the top of the well, through the chromatographic bed, and out the bottom of each well.

How it works



Sample loaded into Flow-Thru Plate well: target molecule binds media

Pressure (centrifuge/vacuum) forces impurities out of well bottom; target remains

Target molecules released from media; purified sample collected

Specifications

	Size	Media bed volume (µL)	Binding capacity
FNS	96-well	40	2000 µg
MFNS	96-well	5 - 7	400 µg
iP	96-well	1	1 µg

iTip™

Custom-packed SPE tips for automated sample prep on liquid handling platforms

- Custom-packed tips of any volume, size, and shape (including conductive tips) with proven reproducibility
- Extensive variety of chromatographic media available for isolation/enrichment of any molecule
- 96-well plate formats also available

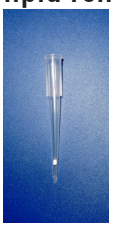
Product description

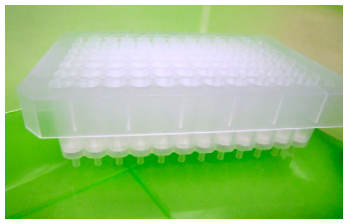
Glygen works closely with platform companies to custom-pack manufacturers' original tips/plates (including conductive tips) with high-performance chromatographic media.

Glygen is the world-leader in media packing; Glygen's proprietary Direct Embedding Process (DEP) enables packing of tips of any volume, size, and shape with proven reproducibility.

CrashTip™ and CrashPlate

Innovative tools for protein precipitation and phospholipid removal to isolate small molecules





- High efficiency protein precipitation and removal of phospholipids
- Separation of volumes as low as a few nanoliters

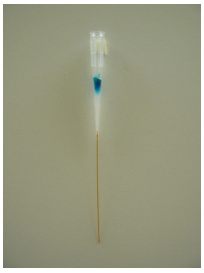
Product description

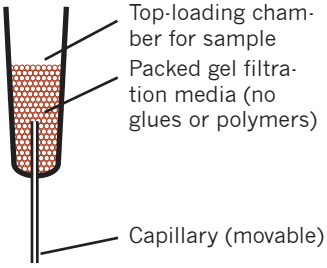
The CrashTip™ and CrashPlate are designed to shake samples for easy isolation of small molecules (e.g., one-step precipitation of proteins, removal of phospholipids), as well as enhanced binding and recovery of phosphopeptides.

The 96-well CrashPlate and the CrashTip™ micro spin column (10 - 200 µL) have specially designed filters allowing liquid to pass through during centrifugation, but not during shaking.

CapTip™

Gel filtration tip with movable capillary for targeted collection of concentrated fractions





- Enables gel filtration separation of peptides, nucleotides, or small molecules into size-based fractions
- Efficient and clean collection of fractions without repeated elution steps and/or excessive dilution

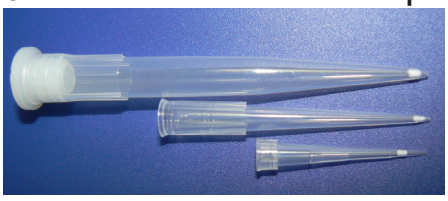
Product description

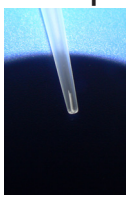
CapTip™ enables gel filtration and collection of concentrated fractions within its unique Capillary-in-a-Tip™ format - ideal for small molecular weight molecules.

Unlike mainstream methods requiring repeated elution steps and resulting in extremely dilute small-molecular weight fractions, the CapTip™ allows efficient and clean collection of concentrated fractions.

FilterTip™ and SlitTip™

Contamination-free size-based particle separation





- Filtration of small sample volumes with minimal loss

Product description

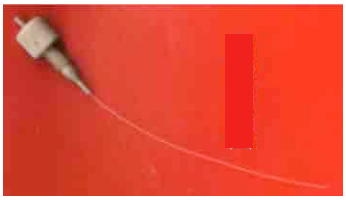
FilterTip™ and SlitTip™ enable size-based filtration within a unique tip format with minimal sample loss, ideal for removal of particles like cell membrane fragments and affinity beads. FilterTip™ contains at its bottom a 0.5 µm inert filter. SlitTip™ is a filterless technology with a 1-2 µm slit to separate particles.

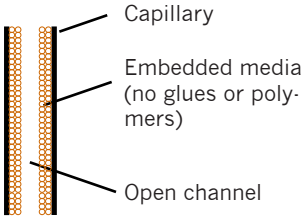
Specifications

	Type	Tip vol. (µL)	Resolution
FT1	Filter	1 - 10 µL	0.5 µm
FT2	Filter	10 - 200 µL	0.5 µm
FT3	Filter	100 - 1000 µL	0.5 µm
SLT1	No filter	1 - 10 µL	1-2 µm
SLT2	No filter	10 - 200 µL	1-2 µm
SLT3	No filter	100 - 1000 µL	1-2 µm

LC-Fiber™

Capillary tube embedded with chromatography media for online enrichment





- Fast online sample preparation with minimal loss
- Cleaner samples, and no contamination from a filter
- Separation of volumes as low as a few nanoliters

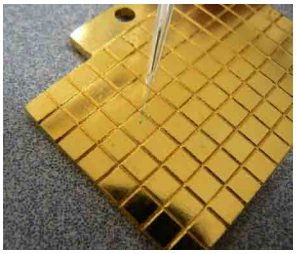
Product description

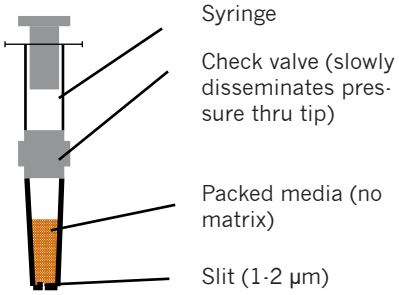
Glygen's LC-Fiber™ is a revolutionary patented capillary tubing for sample preparation. In the LC-Fiber™, chromatography material is directly attached to the inner surface of the capillary (as low as 50 micron i.d.), allowing for sample flow with little resistance. The absence of a filter allows the use of chromatographic media in very small sample volumes (i.e., nanoliters).

LC-Fiber™ can be used as a Capillary for Solid Phase Extraction (CSPE), for capillary HPLC, capillary electro chromatography (CEC), or as an HPLC sample loop for pre column purification.

MALDI-Pen™

Enables focused and concentrated spotting on MALDI target plates





- Allows automatic continuous-line spotting/elution to find concentrated area of peptides
- Enable partial separation of peptides in fractions

Product description

The MALDI-Pen™, a unique technology for sample application, enables a very focused and concentrated spotting on the MALDI target.

The MALDI-Pen™ has a small slit that enables fluid to automatically flow through but not the chromatographic media. The target molecules (e.g., peptides) can be eluted in small fractions of as low as a few nanoliters to microliters.

Trap Column

Specialty trap columns for online purification

- Flexible configuration: can be joined in a series
- Fit with any HPLC system using standard fittings
- Different sizes address a variety of needs

Product description

Glygen offers unique Trap Columns for online prepurification of peptides. Trap Columns can be attached directly as pre-column, or in the multi-port column switching-valve, directly to any HPLC system using normal 10-32 fittings. They also can be joined in series to achieve multiplicative effects of separation.

Specifications

10x0.380 mm Trap Columns available in packs of 3, and contain ~ 1 µL of media (~ 0.5 - 2 mg).

	Type	Media bed volume
TRT1	Female to Male	1 nL
TRF1	Female to Female	75 nL
TRF2	Female to Female	250 nL

Phospho-molecule HPLC Column

Leading HPLC columns for phosphoproteomics

- Offers sharp separations
- Optimal selectivity, excellent reproducibility

Product description

Glygen HPLC columns are ideal for proteomic separations, or for scaling up to purify compounds, containing either TiO_2 or ZrO_2 media.

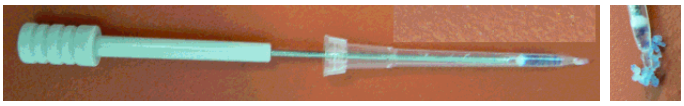
Specifications

HPLC Columns available with TiO_2 or ZrO_2 media, particle sizes of 3 or 5 µm with 300Å pore size, with a variety of column sizes.

	Diameter
H_004	4.6 mm
H_002	2.1 mm
H_101	1.0 mm
H_501	0.5 mm
H_301	0.3 mm

GelCrusher™

Tool to crush gels for enhancing activity of enzymes (e.g., tryptic digestion) to improve peptide recovery



- Increase surface area of gel in contact with enzymes, enhancing enzymatic reaction and peptide recovery
- Disposable, so no risk of cross-contamination

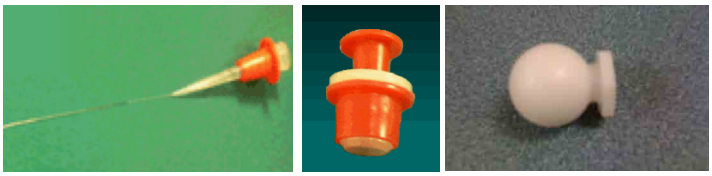
Product description

The GelCrusher™ is based on a micropipette tip, and has a very narrow opening at the bottom. The Gel-Crusher's piston pushes the small piece of gel through the Crusher's narrow slit, which crushes the gel.

Gel crushing can enhance enzymatic action of a solution of enzymes such as trypsin. During crushing, the enzyme penetrates the gel under pressure, and exposes more protein molecules in the gel to the enzyme.

Dialyzers

Enable rapid dialysis with minimal sample loss



- Ultra-thin membranes enables rapid dialysis
- Can dialyze even small sample volumes (e.g., 0.5-10 µL) with Fiber Dialyzer
- Innovative Ball Dialyzer (patent-pending) ensures sample contact with membrane

Product description

Glygen's unique dialyzers are suited for dialysis of samples from 0.5-200 µL. Ultra-thin membranes enable dramatically shorter dialysis times, and unique designs ensure enhanced reliability and sample-membrane contact.

Specifications

1K, 2K, 5K and 10K and 25K MWCO membranes; Fiber Dialyzer available for small volumes (0.5-10 µL).

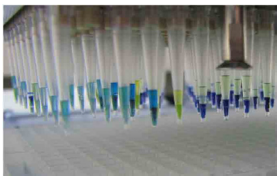
GlyVac™ Vacuum Manifold

Solution for filtration-type sample purification

- High-clarity polycarbonate components allow various filtration processes to be monitored visually
- Accommodates a wide variety of different columns and SBS-format, 96- and 384-well plates
- Easy to maintain, resistant to breakage/degradation

PepTip™

Synthesis-in-a-Tip™ packed with proprietary linker media for automated solid-phase peptide synthesis



- Revolutionary tool enables highly-reproducible solid-phase peptide synthesis in an automated tip format
- Dramatically improve throughput by enabling 384 synthesis reactions in parallel

Product description

Glygen's PepTip™, packed with proprietary PepLink™ scaffolding media, enables solid-phase peptide synthesis in a tip – enabling for the first time the ability to perform 384 synthesis reactions in parallel on a single liquid handling platform (increasing productivity by nearly 400x).

Glygen can custom-pack any platform manufacturer's tips with PepLink™ media, enabling parallel peptide synthesis on any liquid handling platform.

MagnoPipette™

Innovative magnetic pipettes to unclutter lab workspaces and reduce contamination

Ultra-strong magnet sticks to any metal surface

- Unique and patented design
- Unclutters workspaces and reduces tip contamination

Product description

The MagnoPipette™, a high-performance pipettor with incorporated magnet, can stick to any metal surface (e.g., hood, lab refrigerator, even a binder clip affixed to a shelf). The MagnoPipette™ unclutters lab workspaces and reduces contamination – improving organization and results.

MagnoPipette™, is available in single-, 8-, and 12-channel, as well as in various volume configurations.

Protein/Peptide Desalting NuTip™

Micro-SPE desalting cartridge for low concentration and low volume protein/peptide samples

C18 • C8 • C4 • Carbon • HILIC

[AUTOMATABLE]

- Simple, fast sample prep with minimal loss
- Desalting media optimized to hydrophobic/hydrophilic nature of target molecule
- Media directly embedded on inner cartridge wall (no matrix) for reduced contamination, no back pressure

Product description

Protein/Peptide Desalting NuTip is based on Glygen's flagship NuTip micro-SPE technology, enabling separation of low-concentration/volume samples by maximizing surface area in contact with the sample.

The desalting media is embedded directly in the inner surface of the tip: there are no polymers, glues or scaffolding. This proprietary design prevents contamination or permeability problems common in competitor tips.

Media selection

Media	Use for
C18	Hydrophobic (Highest)
C8	Hydrophobic (High)
C4	Hydrophobic
Carbon (Graphite)	Both hydrophobic and -philic
HILIC	Hydrophilic

Specifications

Sold in packs of 96 tips.

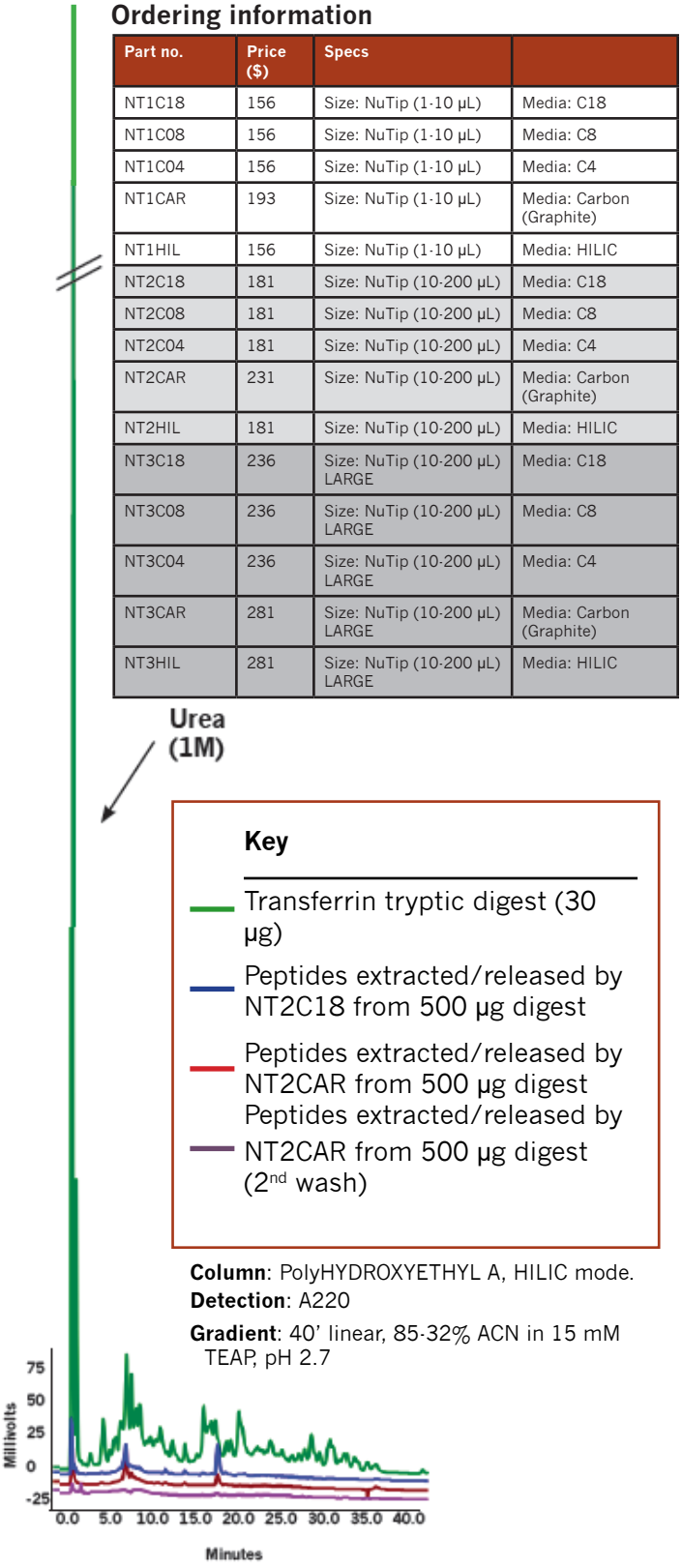
	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
NT1	1 - 10	0.5 - 10	1 µg	30 µg
NT2	10 - 200	2 - 25	2.5 µg	75 µg
NT3	10 - 200	5 - 50	15 µg	400 µg

Selected references

- CAR, C18: A Alpert and A Shukla. Displacement Chromatography Effects Can Cause Highly Selective Sampling of Peptides During Solid Phase Extraction Cleanup. ABRF 2004 Poster.
- CAR: Susan Grass, Cheryl F. Lichti, R. Reid Townsend, Julia Gross, and Joseph W. St. Geme, III The Haemophilus influenzae HMW1C Protein Is a Glycosyltransferase That Transfers Hexose Residues to Asparagine Sites in the HMW1 Adhesin PLoS Pathog. 2010 May; 6(5): e1000919.
- C18: Hideaki Shimizu et al. Crystal structure of an active form of BACE1, an enzyme responsible for Amyloid Protein production. Molecular and Cellular Biology, Vol. 28:11 (2008), p. 3663-3671.
- C18: Tariq Mahmood et al. Proteomic analysis of bacterial-blight defense-responsive proteins in rice leaf blades. Proteomics, Vol. 6, Issue 22 (2006), p. 6053-5.

Ordering information

Part no.	Price ($)	Specs	
NT1C18	156	Size: NuTip (1-10 µL)	Media: C18
NT1C08	156	Size: NuTip (1-10 µL)	Media: C8
NT1C04	156	Size: NuTip (1-10 µL)	Media: C4
NT1CAR	193	Size: NuTip (1-10 µL)	Media: Carbon (Graphite)
NT1HIL	156	Size: NuTip (1-10 µL)	Media: HILIC
NT2C18	181	Size: NuTip (10-200 µL)	Media: C18
NT2C08	181	Size: NuTip (10-200 µL)	Media: C8
NT2C04	181	Size: NuTip (10-200 µL)	Media: C4
NT2CAR	231	Size: NuTip (10-200 µL)	Media: Carbon (Graphite)
NT2HIL	181	Size: NuTip (10-200 µL)	Media: HILIC
NT3C18	236	Size: NuTip (10-200 µL) LARGE	Media: C18
NT3C08	236	Size: NuTip (10-200 µL) LARGE	Media: C8
NT3C04	236	Size: NuTip (10-200 µL) LARGE	Media: C4
NT3CAR	281	Size: NuTip (10-200 µL) LARGE	Media: Carbon (Graphite)
NT3HIL	281	Size: NuTip (10-200 µL) LARGE	Media: HILIC



Data

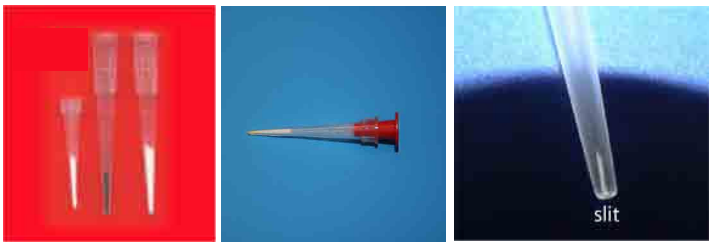
Desalting of peptides by Carbon and C18 NuTips: Carbon and C18 NuTips effectively remove high-concentration urea to reveal peptide peaks

Data courtesy of Andrew Alpert (PolyLC, Inc.) and Ashok Shukla (Glygen)

Protein/Peptide Desalting TopTip™

Micro-spin column (no filter) packed with pure desalting media for low concentration and low volume protein/peptide samples

C18 • C8 • C4 • Carbon • HILIC • Gel Filtration



- Significantly reduce time and expense of SPE (e.g., can top-load samples and centrifuge)
- Dispersive media with no filter, glue, or polymer: improves binding, sample recovery, and reproducibility
- Accommodates wide spectrum of volumes and allows precise control over binding and elution rates
- Ideal for desalting small sample concentrations

Product description

Protein/Peptide Desalting TopTip is based on Glygen's proprietary micro-spin column technology, enabling high-fidelity separation of low-concentration/volume samples.

The fine slit at the bottom of the TopTip (slit width: 1-2 µm) permits liquid to pass through, but retains chromatographic material in the tip. This unique design eliminates the need for a filter – reducing dead volume, loss of sample and contamination risk.

Elution pressure can be generated using any centrifuge (adaptor included), or manually with a syringe.

Media selection

Protein/Peptide Desalting TopTips are available with a wide selection of chromatographic media:

Media	Use for
C18	Hydrophobic (Highest)
C8	Hydrophobic (High)
C4	Hydrophobic
Carbon (Graphite)	Both hydrophobic and hydrophilic
HILIC	Hydrophilic
G-10, G-25, G-50, G-100, P-2, P-4, P-6,	Size-based gel filtration

Specifications

Sold in packs of 96, except for TT3, which are sold in packs of 20.

	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
TT1	1 - 10	1 - 10	400 µg	4 mg
TT2	10 - 200	2 - 25	1000 µg	10 mg
TT3	100 - 1000	20 - 1000	5000 µg	50 mg

* No sample volume limit when using included syringe

Selected references

- C18: Hao Wang, et al. PKC-[beta]II sensitizes cardiac myofilaments to Ca2+ by phosphorylating troponin I on threonine-144. Journal of Molecular and Cellular Cardiology, Volume 41, Issue 5 (2006), p. 823-833.
- CAR: Michael Wacker, et al. Substrate specificity of bacterial oligosaccharyltransferase suggests a common transfer mechanism for the bacterial and eukaryotic systems. PNAS, Volume 103, No. 18 (2006) p. 7088-7093
- HIL: Wim Fremout, et al. Tryptic peptide analysis of protein binders in works of art by liquid chromatography-tandem mass spectrometry. Analytica Chimica Acta, Volume 658, Issue 2 (2010), p. 156-162.

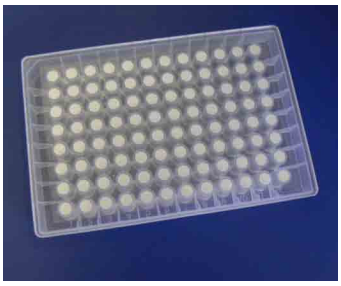
Ordering information

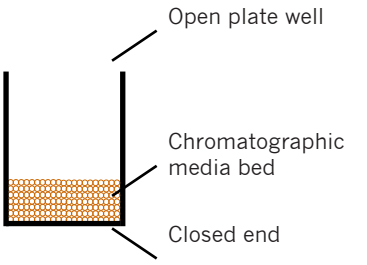
Part no.	Price ($)	Specs	
TT1C18	181	Size: TopTip (1-10 µL)	Media: C18
TT1C08	181	Size: TopTip (1-10 µL)	Media: C8
TT1C04	181	Size: TopTip (1-10 µL)	Media: C4
TT1CAR	243	Size: TopTip (1-10 µL)	Media: Carbon (Graphite)
TT1HIL	206	Size: TopTip (1-10 µL)	Media: HILIC
TT1G10	118	Size: TopTip (1-10 µL)	Media: G-10
TT1G25	118	Size: TopTip (1-10 µL)	Media: G-25
TT1G50	118	Size: TopTip (1-10 µL)	Media: G-50
TT1G100	118	Size: TopTip (1-10 µL)	Media: G-100
TT1P2	118	Size: TopTip (1-10 µL)	Media: P-2
TT1P4	118	Size: TopTip (1-10 µL)	Media: P-4
TT1P6	118	Size: TopTip (1-10 µL)	Media: P-6
TT2C18	218	Size: TopTip (10-200 µL)	Media: C18
TT2C08	218	Size: TopTip (10-200 µL)	Media: C8
TT2C04	218	Size: TopTip (10-200 µL)	Media: C4
TT2CAR	331	Size: TopTip (10-200 µL)	Media: Carbon (Graphite)
TT2HIL	281	Size: TopTip (10-200 µL)	Media: HILIC
TT2G10	118	Size: TopTip (10-200 µL)	Media: G-10
TT2G25	118	Size: TopTip (10-200 µL)	Media: G-25
TT2G50	118	Size: TopTip (10-200 µL)	Media: G-50
TT2G100	118	Size: TopTip (10-200 µL)	Media: G-100
TT2P2	118	Size: TopTip (10-200 µL)	Media: P-2
TT2P4	118	Size: TopTip (10-200 µL)	Media: P-4
TT2P6	118	Size: TopTip (10-200 µL)	Media: P-6
TT3C18	118	Size: TopTip (100-1000 µL)	Media: C18
TT3C08	118	Size: TopTip (100-1000 µL)	Media: C8
TT3C04	118	Size: TopTip (100-1000 µL)	Media: C4
TT3CAR	206	Size: TopTip (100-1000 µL)	Media: Carbon (Graphite)
TT3HIL	156	Size: TopTip (100-1000 µL)	Media: HILIC
TT3G10	118	Size: TopTip (100-1000 µL)	Media: G-10
TT3G25	118	Size: TopTip (100-1000 µL)	Media: G-25
TT3G50	118	Size: TopTip (100-1000 µL)	Media: G-50
TT3G100	118	Size: TopTip (100-1000 µL)	Media: G-100
TT3P2	118	Size: TopTip (100-1000 µL)	Media: P-2
TT3P4	118	Size: TopTip (100-1000 µL)	Media: P-4
TT3P6	118	Size: TopTip (100-1000 µL)	Media: P-6

Protein/Peptide Desalting Lab-in-a-Plate™ Coated Plate

96-well plate coated with high-performance media for multi-sample/automated desalting

C18 • C8 • C4 • Carbon
[AUTOMATABLE]





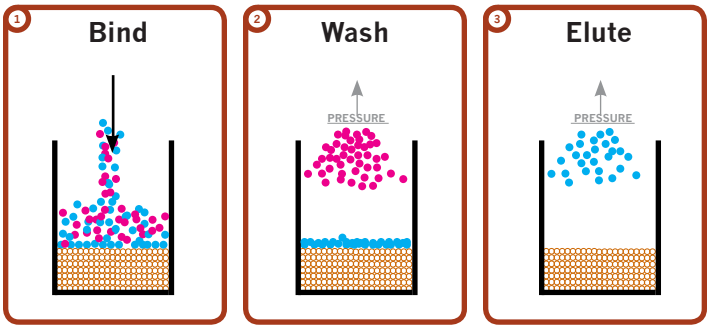
- High binding capacity relative to conventional ELISA
- Can be used with most liquid handling platforms

Product description

Protein/Peptide Desalting Coated Plate is a patented technology for sample preparation of proteins and peptides. Coated Plates work like ELISA plates, with chromatographic media embedded at the bottom of each well.

Coated plates are SBS standard and come in 96-, 384- and 1536-well formats. The plates are available in polypropylene or polystyrene.

How it works



Unpurified sample loaded into well: target molecule binds media

Impurities washed out of well; target remains bound to media

Target molecules released; purified sample collected

Media selection

Protein/Peptide Desalting Coated Plate is available with a wide selection of chromatographic media:

Media	Use for
C18	Hydrophobic (Highest)
C8	Hydrophobic (High)
C4	Hydrophobic
Carbon (Graphite)	Both hydrophobic and hydrophilic

Specifications

Sold in packs of 5 plates.

	Material	Size	Sample volume (µL)	Binding capacity
NSS	Polystyrene	96-well	25 - 200	2 µg
NSP	Polypropylene	96-well	25 - 200	2 µg
THS	Polystyrene	384-well	10 - 70	500 ng
FES	Polystyrene	1536-well	2 - 10	70 ng

Ordering information

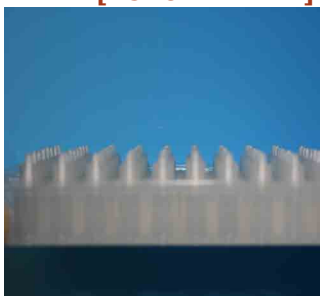
Part no.	Price ($)	Specs		
NSSC18	249	Size: 96-well	Material: Polystyrene	Media: C18
NSSC08	249	Size: 96-well	Material: Polystyrene	Media: C8
NSSC04	249	Size: 96-well	Material: Polystyrene	Media: C4
NSSCAR	249	Size: 96-well	Material: Polystyrene	Media: Carbon (Graphite)
NSPC18	249	Size: 96-well	Material: Polypropylene	Media: C18
NSPC08	249	Size: 96-well	Material: Polypropylene	Media: C8
NSPC04	249	Size: 96-well	Material: Polypropylene	Media: C4
NSPCAR	249	Size: 96-well	Material: Polypropylene	Media: Carbon (Graphite)
THSC18	449	Size: 384-well	Material: Polystyrene	Media: C18
THSC08	449	Size: 384-well	Material: Polystyrene	Media: C8
THSC04	449	Size: 384-well	Material: Polystyrene	Media: C4
THSCAR	449	Size: 384-well	Material: Polystyrene	Media: Carbon (Graphite)
FESC18	749	Size: 1536-well	Material: Polystyrene	Media: C18
FESC08	749	Size: 1536-well	Material: Polystyrene	Media: C8
FESC04	749	Size: 1536-well	Material: Polystyrene	Media: C4
FESCAR	749	Size: 1536-well	Material: Polystyrene	Media: Carbon (Graphite)

Protein/Peptide Desalting Lab-in-a-Plate™ Flow-Thru Plate

96-well plate for vacuum/centrifuge flow-through chromatographic separation with desalting media

C18 • C8 • C4 • Carbon

[AUTOMATABLE]



- High binding capacity coupled with one of the smallest chromatographic bed volume on the market – ideal for analysis of small sample concentrations
- Ideal for high-throughput screening applications

Product description

Protein/Peptide Desalting Flow-Thru Plates are the ideal equipment for vacuum/centrifuge powered SPE of small volumes of sample using various types of media (for applications like high throughput screening, drug metabolite analysis, etc). The Flow-Thru Plate's unique design allows sample to flow from the top of the well, through the chromatographic bed, and out the bottom of each well.

Media selection

Protein/Peptide Desalting Flow-Thru Plate is available with a wide selection of media:

Media	Use for
C18	Hydrophobic (Highest)
C8	Hydrophobic (High)
C4	Hydrophobic
Carbon (Graphite)	Both hydrophobic and hydrophilic

Specifications

Sold in packs of one 96-well plate.

	Size	Media bed volume (µL)	Binding capacity
FNS	96-well	40	2000 µg
MFNS	96-well	5 - 7	400 µg
iP	96-well	1	1 µg

Ordering information

Part no.	Price ($)	Specs	
FNSC18	175	Media bed vol: 40 µL	Media: C18
FNSC08	175	Media bed vol: 40 µL	Media: C8
FNSC04	175	Media bed vol: 40 µL	Media: C4
FNSCAR	225	Media bed vol: 40 µL	Media: Carbon (Graphite)
MFNSC18	210	Media bed vol: 7 µL	Media: C18
MFNSC08	210	Media bed vol: 7 µL	Media: C8
MFNSC04	210	Media bed vol: 7 µL	Media: C4
MFNSCAR	210	Media bed vol: 7 µL	Media: Carbon (Graphite)
iPC18	220	Media bed vol: 1 µL	Media: C18
iPC08	220	Media bed vol: 1 µL	Media: C8
iPC04	220	Media bed vol: 1 µL	Media: C4
iPCAR	220	Media bed vol: 1 µL	Media: Carbon (Graphite)

GlyVac™ Vacuum Manifold

Optimized vacuum for Lab-in-a-Plate Flow-Thru Plate sample purification

- High-clarity polycarbonate components allow various filtration processes to be monitored visually
- Accommodates a wide variety of different columns and SBS-format, 96- and 384-well plates
- Easy to maintain, resistant to breakage/degradation

Specifications

Manifold base is injection molded from ABS plastic; top and middle support molded from polycarbonate. 96-well plate support constructed from stainless steel.

Ordering information

Part no.	Price ($)	Specs
VAC001	455	Configuration: Vacuum manifold only
VAC002	625	Configuration: Vacuum manifold with concentration adaptor

Protein/Peptide Enrichment NuTip™

Micro-SPE cartridge for enrichment low concentration and low volume protein/peptide samples

C18 • C8 • C4 • Carbon • Carbon+C18 • HILIC • SAX • WAX • SCX • WCX

[AUTOMATABLE]

- Simple, fast sample prep with minimal loss
- Enrichment media optimized to characteristics of target molecule and sample
- Media directly embedded on inner cartridge wall (no matrix) for reduced contamination, no back pressure
- Different sizes to accommodate samples of varying volumes/concentrations (e.g., as small as 0.1 µL volume)

Product description

Protein/Peptide Enrichment NuTip is based on Glygen's flagship NuTip micro-SPE technology, enabling separation of low-concentration/volume samples by maximizing surface area in contact with the sample.

Enrichment media is embedded directly in the inner surface of the tip: there are no polymers, glues or scaffolding. This proprietary design prevents contamination or permeability problems common in competitor tips.

Media selection

Protein/Peptide Enrichment NuTips are available with a wide selection of chromatographic media:

Media	Use for
C18	Hydrophobic (Highest)
C8	Hydrophobic (High)
C4	Hydrophobic
Carbon (Graphite)	Both hydrophobic and hydrophilic
Carbon (Graphite)+C18	Both hydrophobic and hydrophilic
HILIC	Hydrophilic
Silica WCX, SCX	Basic
Silica WAX, SAX	Acidic

Specifications

Sold in packs of 96 tips.

	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
NT1	1 - 10	0.5 - 10	1 µg	30 µg
NT2	10 - 200	2 - 25	2.5 µg	75 µg
NT3	10 - 200	5 - 50	15 µg	400 µg

Selected references

- C18: A Cvetkovic, et al. Microbial metalloproteomes are largely uncharacterized. Nature 466 (2010), p. 779-782.
- C18: N Ahsan, et al. Ozone stress-induced proteomic changes in leaf total soluble and chloroplast proteins of soybean reveal that carbon allocation is involved in adaptation in the early developmental stage. PROTEOMICS, Vol. 10, Issue 14 (2010) p. 2605–2619.

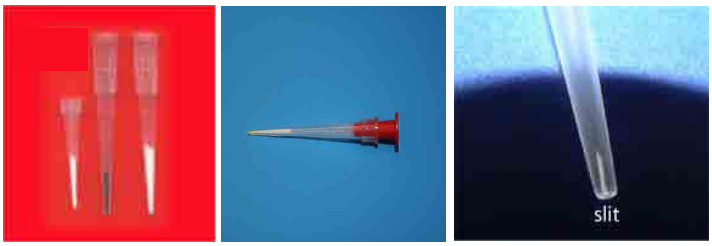
Ordering information

Part no.	Price ($)	Specs	
NT1C18	156	Size: NuTip (1-10 µL)	Media: C18
NT1C08	156	Size: NuTip (1-10 µL)	Media: C8
NT1C04	156	Size: NuTip (1-10 µL)	Media: C4
NT1CAR	193	Size: NuTip (1-10 µL)	Media: Carbon (Graphite)
NT1MC18	193	Size: NuTip (1-10 µL)	Media: C18+Carbon (Graphite)
NT1HIL	156	Size: NuTip (1-10 µL)	Media: HILIC
NT1SSA	156	Size: NuTip (1-10 µL)	Media: PolySULFOETHYL A (Silica SCX)
NT1CAT	156	Size: NuTip (1-10 µL)	Media: PolyCAT A (Silica WCX)
NT1SAX	156	Size: NuTip (1-10 µL)	Media: Silica Strong Anion (SAX)
NT1WAX	156	Size: NuTip (1-10 µL)	Media: PolyWAX LP (Silica WAX)
NT2C18	181	Size: NuTip (10-200 µL)	Media: C18
NT2C08	181	Size: NuTip (10-200 µL)	Media: C8
NT2C04	181	Size: NuTip (10-200 µL)	Media: C4
NT2CAR	231	Size: NuTip (10-200 µL)	Media: Carbon (Graphite)
NT2MC18	231	Size: NuTip (10-200 µL)	Media: C18+Carbon (Graphite)
NT2HIL	181	Size: NuTip (10-200 µL)	Media: HILIC
NT2SSA	181	Size: NuTip (10-200 µL)	Media: PolySULFOETHYL A (Silica SCX)
NT2CAT	181	Size: NuTip (10-200 µL)	Media: PolyCAT A (Silica WCX)
NT2SAX	181	Size: NuTip (10-200 µL)	Media: Silica Strong Anion (SAX)
NT2WAX	181	Size: NuTip (10-200 µL)	Media: PolyWAX LP (Silica WAX)
NT3C18	236	Size: NuTip (10-200 µL) LARGE	Media: C18
NT3C08	236	Size: NuTip (10-200 µL) LARGE	Media: C8
NT3C04	236	Size: NuTip (10-200 µL) LARGE	Media: C4
NT3CAR	281	Size: NuTip (10-200 µL) LARGE	Media: Carbon (Graphite)
NT3MC18	281	Size: NuTip (10-200 µL) LARGE	Media: C18+Carbon (Graphite)
NT3HIL	281	Size: NuTip (10-200 µL) LARGE	Media: HILIC
NT3SSA	281	Size: NuTip (10-200 µL) LARGE	Media: PolySULFOETHYL A (Silica SCX)
NT3CAT	281	Size: NuTip (10-200 µL) LARGE	Media: PolyCAT A (Silica WCX)
NT3SAX	281	Size: NuTip (10-200 µL) LARGE	Media: Silica Strong Anion (SAX)
NT3WAX	281	Size: NuTip (10-200 µL) LARGE	Media: PolyWAX LP (Silica WAX)

Protein/Peptide Enrichment TopTip™

Micro-spin column (no filter) for low concentration and low volume protein/peptide samples

C18 • C8 • C4 • Carbon • Carbon+C18 • HILIC • SAX • WAX • SCX • WCX • Gel Filtration



- Significantly reduce time and expense of SPE
- Dispersive media with no filter, glue, or polymer: improves binding, sample recovery, and reproducibility
- Micro-spin column allows precise control over binding/elution rate

Product description

Protein/Peptide Enrichment TopTip micro-spin column enables separation of low-concentration/volume samples. The fine 1-2 µm slit at the bottom of the TopTip permits liquid to pass through (via centrifuge or syringe), but retains media in the tip. This unique design reduces dead volume, loss of sample and contamination risk.

Media selection

Media	Use for
C18	Hydrophobic (Highest)
C8	Hydrophobic (High)
C4	Hydrophobic
Carbon (Graphite)	Both hydrophobic and -philic
Carbon (Graphite)+C18	Both hydrophobic and -philic
HILIC	Hydrophilic
POROS SCX	Strongly basic
Silica WCX, SCX	Basic
Silica WAX, SAX	Acidic
POROS WAX, SAX	Strongly acidic
G-10, G-25, G-50, G-100, P-2, P-4, P-6	Size-based gel filtration

Specifications

Sold in packs of 96, except for TT3, which are sold in packs of 20.

	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
TT1	1 - 10	1 - 10	400 µg	4 mg
TT2	10 - 200	2 - 25	1000 µg	10 mg
TT3	100 - 1000	20 - 1000	5000 µg	50 mg

* No sample volume limit when using included syringe

Ordering information

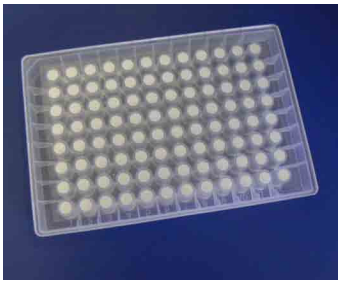
Part no.	Price ($)	Specs	
TT1C18	181	Size: TopTip (1-10 µL)	Media: C18
TT1C08	181	Size: TopTip (1-10 µL)	Media: C8
TT1C04	181	Size: TopTip (1-10 µL)	Media: C4
TT1CAR	243	Size: TopTip (1-10 µL)	Media: Carbon (Graphite)
TT1MC18	243	Size: TopTip (1-10 µL)	Media: C18+Carbon (Graphite)
TT1HIL	206	Size: TopTip (1-10 µL)	Media: HILIC
TT1PSC	243	Size: TopTip (1-10 µL)	Media: POROS strong cation exchanger
TT1PWA	243	Size: TopTip (1-10 µL)	Media: POROS weak anion exchanger
TT1PSA	243	Size: TopTip (1-10 µL)	Media: POROS Strong Anion exchanger
TT1SSA	206	Size: TopTip (1-10 µL)	Media: PolySULFOETHYL A (Silica SCX)
TT1CAT	206	Size: TopTip (1-10 µL)	Media: PolyCAT A (Silica WCX)
TT1SAX	206	Size: TopTip (1-10 µL)	Media: Silica Strong Anion (SAX)
TT1WAX	206	Size: TopTip (1-10 µL)	Media: PolyWAX LP (Silica WAX)
TT1G10	118	Size: TopTip (1-10 µL)	Media: G-10
TT1G25	118	Size: TopTip (1-10 µL)	Media: G-25
TT1G50	118	Size: TopTip (1-10 µL)	Media: G-50
TT1G100	118	Size: TopTip (1-10 µL)	Media: G-100
TT1P2	118	Size: TopTip (1-10 µL)	Media: P-2
TT1P4	118	Size: TopTip (1-10 µL)	Media: P-4
TT1P6	118	Size: TopTip (1-10 µL)	Media: P-6
TT2C18	218	Size: TopTip (10-200 µL)	Media: C18
TT2C08	218	Size: TopTip (10-200 µL)	Media: C8
TT2C04	218	Size: TopTip (10-200 µL)	Media: C4
TT2CAR	331	Size: TopTip (10-200 µL)	Media: Carbon (Graphite)
TT2MC18	331	Size: TopTip (10-200 µL)	Media: C18+Carbon (Graphite)
TT2HIL	281	Size: TopTip (10-200 µL)	Media: HILIC
TT2PSC	331	Size: TopTip (10-200 µL)	Media: POROS strong cation exchanger
TT2PWA	331	Size: TopTip (10-200 µL)	Media: POROS weak anion exchanger
TT2PSA	331	Size: TopTip (10-200 µL)	Media: POROS Strong Anion exchanger
TT2SSA	281	Size: TopTip (10-200 µL)	Media: PolySULFOETHYL A (Silica SCX)
TT2CAT	281	Size: TopTip (10-200 µL)	Media: PolyCAT A (Silica WCX)
TT2SAX	281	Size: TopTip (10-200 µL)	Media: Silica Strong Anion (SAX)
TT2WAX	281	Size: TopTip (10-200 µL)	Media: PolyWAX LP (Silica WAX)
TT2G10	118	Size: TopTip (10-200 µL)	Media: G-10
TT2G25	118	Size: TopTip (10-200 µL)	Media: G-25
TT2G50	118	Size: TopTip (10-200 µL)	Media: G-50
TT2G100	118	Size: TopTip (10-200 µL)	Media: G-100
TT2P2	118	Size: TopTip (10-200 µL)	Media: P-2
TT2P4	118	Size: TopTip (10-200 µL)	Media: P-4
TT2P6	118	Size: TopTip (10-200 µL)	Media: P-6
TT3C18	118	Size: TopTip (100-1000 µL)	Media: C18
TT3C08	118	Size: TopTip (100-1000 µL)	Media: C8
TT3C04	118	Size: TopTip (100-1000 µL)	Media: C4
TT3CAR	206	Size: TopTip (100-1000 µL)	Media: Carbon (Graphite)
TT3MC18	206	Size: TopTip (100-1000 µL)	Media: C18+Carbon (Graphite)
TT3HIL	156	Size: TopTip (100-1000 µL)	Media: HILIC
TT3PSC	206	Size: TopTip (100-1000 µL)	Media: POROS strong cation exchanger
TT3PWA	206	Size: TopTip (100-1000 µL)	Media: POROS weak anion exchanger
TT3PSA	206	Size: TopTip (100-1000 µL)	Media: POROS Strong Anion exchanger
TT3SSA	156	Size: TopTip (100-1000 µL)	Media: PolySULFOETHYL A (Silica SCX)
TT3CAT	156	Size: TopTip (100-1000 µL)	Media: PolyCAT A (Silica WCX)
TT3SAX	156	Size: TopTip (100-1000 µL)	Media: Silica Strong Anion (SAX)
TT3WAX	156	Size: TopTip (100-1000 µL)	Media: PolyWAX LP (Silica WAX)
TT3G10	118	Size: TopTip (100-1000 µL)	Media: G-10
TT3G25	118	Size: TopTip (100-1000 µL)	Media: G-25
TT3G50	118	Size: TopTip (100-1000 µL)	Media: G-50
TT3G100	118	Size: TopTip (100-1000 µL)	Media: G-100
TT3P2	118	Size: TopTip (100-1000 µL)	Media: P-2
TT3P4	118	Size: TopTip (100-1000 µL)	Media: P-4
TT3P6	118	Size: TopTip (100-1000 µL)	Media: P-6

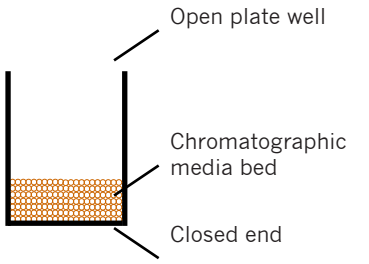
Protein/Peptide Enrichment Lab-in-a-Plate™ Coated Plate

96-well plate coated with high-performance media for multi-sample/automated enrichment

C18 • C8 • C4 • Carbon • SAX • WAX • SCX • WCX

[AUTOMATABLE]





- High binding capacity relative to conventional ELISA
- Can be used with most liquid handling platforms

Product description

Protein/Peptide Enrichment Coated Plate is a patented technology for sample preparation of proteins and peptides. Coated Plates work like ELISA plates, with chromatographic media embedded at the bottom of each well.

Coated plates are SBS standard in 96-, 384- and 1536-well formats, available in polypropylene or polystyrene.

Media selection

Protein/Peptide Desalting Coated Plate is available with a wide selection of chromatographic media:

Media	Use for
C18	Hydrophobic (Highest)
C8	Hydrophobic (High)
C4	Hydrophobic
Carbon (Graphite)	Both hydrophobic and hydrophilic
Silica WCX, SCX	Basic
Silica WAX, SAX	Acidic

Specifications

Sold in packs of 5 plates.

	Material	Size	Sample volume (µL)	Binding capacity
NSS	Polystyrene	96-well	25 - 200	2 µg
NSP	Polypropylene	96-well	25 - 200	2 µg
THS	Polystyrene	384-well	10 - 70	500 ng
FES	Polystyrene	1536-well	2 - 10	70 ng

Ordering information

Part no.	Price ($)	Specs		
NSSC18	249	Size: 96-well	Material: Polystyrene	Media: C18
NSSC08	249	Size: 96-well	Material: Polystyrene	Media: C8
NSSC04	249	Size: 96-well	Material: Polystyrene	Media: C4
NSSCAR	249	Size: 96-well	Material: Polystyrene	Media: Carbon (Graphite)
NSSSCX	249	Size: 96-well	Material: Polystyrene	Media: PolySULFOETHYL A (Silica SCX)
NSSWCX	249	Size: 96-well	Material: Polystyrene	Media: PolyCAT A (Silica WCX)
NSSSAX	249	Size: 96-well	Material: Polystyrene	Media: Silica Strong Anion (SAX)
NSSWAX	249	Size: 96-well	Material: Polystyrene	Media: PolyWAX LP (Silica WAX)
NSPC18	249	Size: 96-well	Material: Polypropylene	Media: C18
NSPC08	249	Size: 96-well	Material: Polypropylene	Media: C8
NSPC04	249	Size: 96-well	Material: Polypropylene	Media: C4
NSPCAR	249	Size: 96-well	Material: Polypropylene	Media: Carbon (Graphite)
NSPSCX	249	Size: 96-well	Material: Polypropylene	Media: PolySULFOETHYL A (Silica SCX)
NSPWCX	249	Size: 96-well	Material: Polypropylene	Media: PolyCAT A (Silica WCX)
NSPSAX	249	Size: 96-well	Material: Polypropylene	Media: Silica Strong Anion (SAX)
NSPWAX	249	Size: 96-well	Material: Polypropylene	Media: PolyWAX LP (Silica WAX)
THSC18	449	Size: 384-well	Material: Polystyrene	Media: C18
THSC08	449	Size: 384-well	Material: Polystyrene	Media: C8
THSC04	449	Size: 384-well	Material: Polystyrene	Media: C4
THSCAR	449	Size: 384-well	Material: Polystyrene	Media: Carbon (Graphite)
THSSCX	449	Size: 384-well	Material: Polystyrene	Media: PolySULFOETHYL A (Silica SCX)
THSWCX	449	Size: 384-well	Material: Polystyrene	Media: PolyCAT A (Silica WCX)
THSSAX	449	Size: 384-well	Material: Polystyrene	Media: Silica Strong Anion (SAX)
THSWAX	449	Size: 384-well	Material: Polystyrene	Media: PolyWAX LP (Silica WAX)
FESC18	749	Size: 1536-well	Material: Polystyrene	Media: C18
FESC08	749	Size: 1536-well	Material: Polystyrene	Media: C8
FESC04	749	Size: 1536-well	Material: Polystyrene	Media: C4
FESCAR	749	Size: 1536-well	Material: Polystyrene	Media: Carbon (Graphite)
FESSCX	749	Size: 1536-well	Material: Polystyrene	Media: PolySULFOETHYL A (Silica SCX)
FESWCX	749	Size: 1536-well	Material: Polystyrene	Media: PolyCAT A (Silica WCX)
FESSAX	749	Size: 1536-well	Material: Polystyrene	Media: Silica Strong Anion (SAX)
FESWAX	749	Size: 1536-well	Material: Polystyrene	Media: PolyWAX LP (Silica WAX)

You may also be interested in:

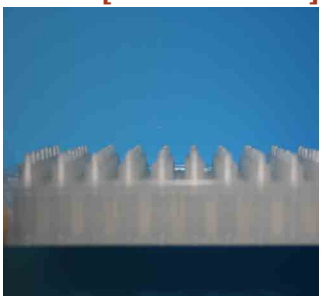
- Protein/Peptide Desalting Coated Plate (see p. 13)
- Phosphopeptide Enrichment Coated Plate (see p. 23)
- Phospholipid Removal Coated Plate (see p. 33)

Protein/Peptide Enrichment
Lab-in-a-Plate™ Flow-Thru Plate

96-well plate for vacuum/centrifuge flow-through chromatographic separation with enrichment media

C18 • C8 • C4 • Carbon • SAX • WAX • SCX • WCX

[AUTOMATABLE]



- High binding capacity coupled with one of the smallest chromatographic bed volume on the market – ideal for analysis of small sample concentrations
- Ideal for high-throughput screening applications

Product description

Protein/Peptide Enrichment Flow-Thru Plates are the ideal equipment for vacuum/centrifuge powered SPE of small volumes of sample using various types of media (for applications like high throughput screening, drug metabolite analysis, etc). The Flow-Thru Plate allows sample to flow from the top of the well, through the media bed, and out the well bottom.

Media selection

Media	Use for
C18	Hydrophobic (Highest)
C8	Hydrophobic (High)
C4	Hydrophobic
Carbon (Graphite)	Both hydrophobic and hydrophilic
Silica WCX, SCX	Basic
Silica WAX, SAX	Acidic

Specifications

Sold in packs of one 96-well plate.

	Size	Media bed volume (µL)	Binding capacity
FNS	96-well	40	2000 µg
MFNS	96-well	5 - 7	400 µg
iP	96-well	1	1 µg

Ordering information

Part no.	Price ($)	Specs	
FNSC18	175	Media bed vol: 40 µL	Media: C18
FNSC08	175	Media bed vol: 40 µL	Media: C8
FNSC04	175	Media bed vol: 40 µL	Media: C4
FNSCAR	225	Media bed vol: 40 µL	Media: Carbon (Graphite)
FNSSCX	225	Media bed vol: 40 µL	Media: PolySULFOETHYL A (Silica SCX)
FNSWCX	225	Media bed vol: 40 µL	Media: PolyCAT A (Silica WCX)
FNSSAX	225	Media bed vol: 40 µL	Media: Silica Strong Anion (SAX)
FNSWAX	225	Media bed vol: 40 µL	Media: PolyWAX LP (Silica WAX)
MFNSC18	210	Media bed vol: 7 µL	Media: C18
MFNSC08	210	Media bed vol: 7 µL	Media: C8
MFNSC04	210	Media bed vol: 7 µL	Media: C4
MFNSCAR	210	Media bed vol: 7 µL	Media: Carbon (Graphite)
MFNSSCX	210	Media bed vol: 7 µL	Media: PolySULFOETHYL A (Silica SCX)
MFNSWCX	210	Media bed vol: 7 µL	Media: PolyCAT A (Silica WCX)
MFNSSAX	210	Media bed vol: 7 µL	Media: Silica Strong Anion (SAX)
MFNSWAX	210	Media bed vol: 7 µL	Media: PolyWAX LP (Silica WAX)
iPC18	265	Media bed vol: 1 µL	Media: C18
iPC08	265	Media bed vol: 1 µL	Media: C8
iPC04	265	Media bed vol: 1 µL	Media: C4
iPCAR	265	Media bed vol: 1 µL	Media: Carbon (Graphite)
iPSCX	265	Media bed vol: 1 µL	Media: PolySULFOETHYL A (Silica SCX)
iPWCX	265	Media bed vol: 1 µL	Media: PolyCAT A (Silica WCX)
iPSAX	265	Media bed vol: 1 µL	Media: Silica Strong Anion (SAX)
iPWAX	265	Media bed vol: 1 µL	Media: PolyWAX LP (Silica WAX)

You may also be interested in:

- GlyVac Vacuum Manifold (see p. 14 or 24)
- Protein/Peptide Desalting Flow-Thru Plate (see p. 14)
- Phosphopeptide Enrichment Flow-Thru Plate (see p. 24)
- Antibody Enrichment Flow-Thru Plate (see p. 28)
- Phospholipid Removal Flow-Thru Plate (see p. 33)

TrypTip™

Perform small sample protein digestion easily within tips embedded with immobilized trypsin

Trypsin (Immobilized)

- Save time and money -- ideal for small sample protein digestion
- Increase surface area of sample in contact with immobilized trypsin, enhancing enzymatic reaction and peptide recovery
- No interference from glues or polymers

Product description

The TrypTip enables easy tryptic digestion of small volume protein samples, improving yields and saving research time and effort.The tips contain immobilized trypsin, which acts upon proteins/peptides that are introduced into the tips.

The TrypTip is available in a flow-through tip format (based upon the flagship NuTip technology), as well as in a micro-spin column (based upon the TopTip).

Specifications

Sold in packs of 96.

	Format	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
NT1	Flow-thru tip	1 - 10	0.5 - 10	1 µg	30 µg
NT2	Flow-thru tip	10 - 200	2 - 25	2.5 µg	75 µg
TT1	Micro-spin column	1 - 10	1 - 10*	400 µg	4 mg
TT2	Micro-spin column	10 - 200	2 - 25*	1000 µg	10 mg

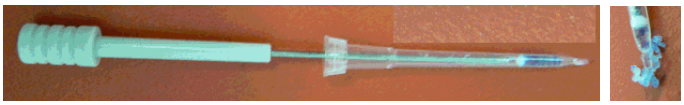
* No sample volume limit when using included syringe

Ordering information

Part no.	Price ($)	Specs
NT1TRY	206	Size: NuTip (1-10 µL)
NT2TRY	281	Size: NuTip (10-200 µL)
TT1TRY	331	Size: TopTip (1-10 µL)
TT2TRY	456	Size: TopTip (1-10 µL)

GelCrusher™

Improve peptide recovery by crushing gels to enhance activity of enzymes (e.g., tryptic digestion)



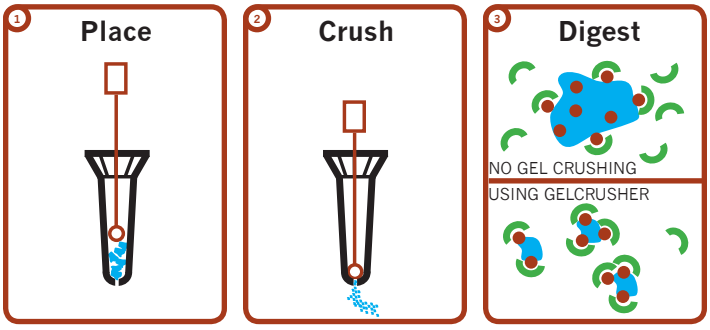
- Increase surface area of gel in contact with enzymes, enhancing enzymatic reaction and peptide recovery
- Disposable, so no risk of cross-contamination

Product description

The GelCrusher™ is based on a micropipette tip, and has a very narrow opening at the bottom. The GelCrusher's piston pushes the small piece of gel through the Crusher's narrow slit, which crushes the gel.

Gel crushing can enhance enzymatic action of a solution of enzymes such as trypsin. During the crushing, the enzyme penetrates the gel under pressure, and exposes more protein molecules in the gel to the enzyme.

How it works



Load gel pieces into crushing chamber; place piston within chamber

Apply pressure onto GelCrusher™ piston; gel is extruded as smaller pieces

Crushed gel proteins more accessible to enzymes, enhancing digestion and peptide recovery

Specifications

The Glygen GelCrusher is for small gel pieces of 1 mm square or larger

Each GelCrusher kit contains one piston, 24 or 96 Crusher Tips, and 24 or 96 Teflon balls

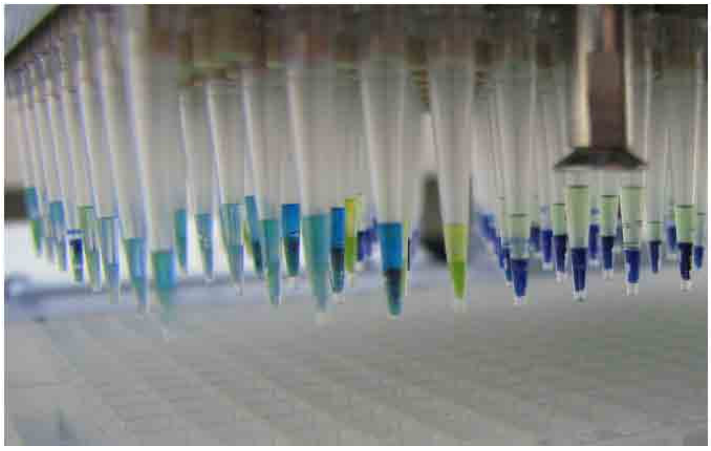
Ordering information

Part no.	Price ($)	Specs
GELC001	125	Quantity: Pack of 24
GELC002	380	Quantity: Pack of 96

PepTip™

Synthesis-in-a-Tip™ packed with proprietary linker media for automated solid-phase peptide synthesis

PepLink™ media
[AUTOMATABLE]



Before Deprotection

After Deprotection

- Revolutionary tool enables solid-phase peptide synthesis in an automated tip format
- Dramatically reduces reaction time, allowing any liquid handling platform to reproducibly perform 192 synthesis reactions in parallel
- Glygen can custom-pack tips of any manufacturer's tips with PepLink media

Product description

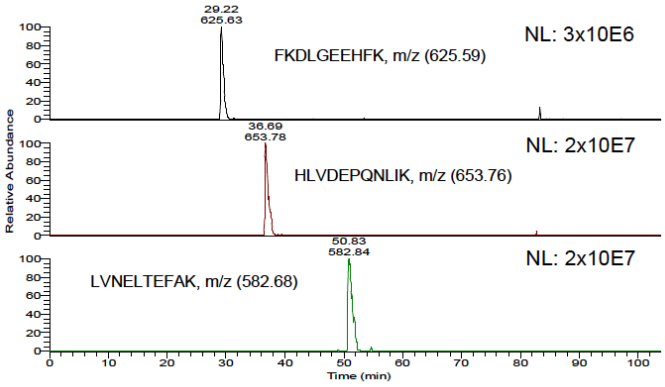
The patent-pending PepTip enables highly-reproducible peptide synthesis to occur within a packed tip.

This revolutionary setup enables a liquid handling platform to perform 192 synthesis reactions in parallel — a step-change in peptide synthesis productivity. The PepTip method is calls for binding of the first amino acid (functionalization), followed by synthesis cycles, side group deprotection, and eluting of newly synthesized peptide into solution — all within the same tip. Thus, PepTip enables scientists to conduct faster, higher yield, and more reproducible peptide synthesis reactions.

PepTips are packed with Glygen's proprietary PepLink media that acts as a scaffolding for the attachment of the first amino acid. The media is optimized for solid-phase peptide synthesis: it is physically stable, permits the rapid filtration of liquids, and is inert to all reagents and solvents.

Data

Spectra of 3 peptides synthesized with PepTip:



Data courtesy of Johannes Hewel (University of Toronto)

Media selection

Glygen custom-packs tips with its proprietary PepLink media for solid-phase peptide synthesis. Tips can be ordered with initial amino acid already bound.

Specifications

Glygen custom-packs original manufacturers' tips with its proprietary PepLink media embedding process; bed volume can vary according to customer preference. Glygen has produced PepTips for multiple platforms, including Agilent's Bravo system, and PerkinElmer's MultiProbe.

	Synthesis capacity per tip	Tips per box
PT1	2 µg	96
PT2	1 µg	384

Ordering information

Part no.	Price ($)	Specs		
PT1PEPLNK	249	Synthesis capacity: 2 µg/tip	Quantity: 96 tips	Media: PepLink media only
PT1PEPAA	499	Synthesis capacity: 2 µg/tip	Quantity: 96 tips	Media: functionalized PepLink media
PT2PEPLNK	1049	Synthesis capacity: 1 µg/tip	Quantity: 384 tips	Media: PepLink media only
PT2PEPAA	2049	Synthesis capacity: 1 µg/tip	Quantity: 384 tips	Media: functionalized PepLink media

Phosphopeptide Enrichment NuTip™

MOAC micro-SPE cartridge for enrichment of low concentration phosphopeptide samples

TiO_2 • ZrO_2 • Mixed TiO_2+ZrO_2

[AUTOMATABLE]

- Simple, fast enrichment with minimal sample loss
- Metal Oxide Affinity Chromatography (MOAC) NuTip enriches phosphorylated Ser, Tyr, and Thr in a highly sensitive and reproducible way, with minimal nonspecific binding
- Media directly embedded on inner cartridge wall (no matrix) for reduced contamination, no back pressure
- Different sizes accommodate varying volumes/concentrations (e.g., as small as 0.1 µL volume)

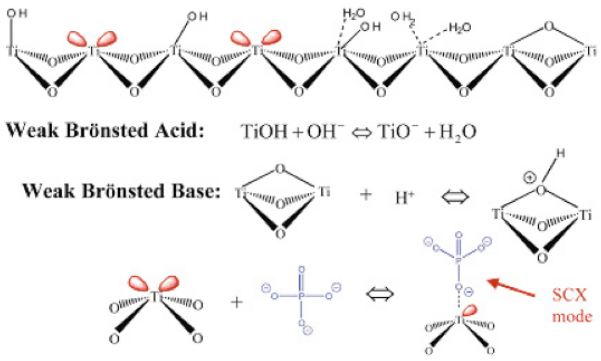
Product description

Phosphopeptide Enrichment NuTip provides MOAC, one of the most widely used strategies in phosphoproteomics, powered by Glygen's patented NuTip micro-SPE technology. This enables separation of low-concentration phosphopeptide samples by maximizing media surface area in contact with the sample.

MOAC media is embedded directly in the inner surface of the tip: there are no polymers, glues or scaffolding. This proprietary design prevents contamination or permeability problems common in competitor tips.

Media selection

Phosphopeptide Enrichment NuTips embedded with proprietary MOAC media. The literature suggests only 30% overlap in phosphopeptides isolated by TiO_2 vs. ZrO_2, emphasizing importance of a selective (and perhaps mixed-media) approach to enrichment.



Media	Use for
TiO_2	Selective for multiply phosphorylated peptides
ZrO_2	Selective for mono-phosphorylated peptides
TiO_2/ZrO_2 mixed	Broad-spectrum

Specifications

Sold in packs of 96 tips. Also available in kits with a sampling of Glygen's three MOAC media (32 tips each of TiO_2, ZrO_2, and TiO_2+Z_rO2 mixed media)

	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
NT1	1 - 10	0.5 - 10	1 µg	30 µg
NT2	10 - 200	2 - 25	2.5 µg	75 µg
NT3	10 - 200	5 - 50	15 µg	400 µg

Selected references

"Both MALDI and ESI-MS analyses of [Glygen's] TiO_2 NuTip eluents resulted in the reproducible observation of a greater number of unique sites of phosphorylation with the least amount of nonspecific binding compared with the other MOAC resins. ...Enrichment procedures ...dramatically improve detection & sequencing of phosphopeptides..." (Gates, et al)

- Gates, et al [NIH]. 'Comparison of metal and metal oxide media for phosphopeptide enrichment prior to mass spectrometric analyses.' JASMS June 2010.
- Mikkat S, et al. MS characterization of qualitative protein polymorphisms in the spinal cords of inbred mouse strains. Proteomics. 2010 Mar;10(5):1050-62.

Ordering information

Part no.	Price ($)	Specs	
NT1TIO	193	Size: NuTip (1-10 µL)	Media: TiO_2
NT1ZRO	193	Size: NuTip (1-10 µL)	Media: ZrO_2
NT1TIZR	193	Size: NuTip (1-10 µL)	Media: TiO_2+ZrO_2
NT1KITPHOS	219	Size: NuTip (1-10 µL)	Media: Selection of TiO_2, ZrO_2, and mixed TiO_2+ZrO_2
NT2TIO	231	Size: NuTip (10-200 µL)	Media: TiO_2
NT2ZRO	231	Size: NuTip (10-200 µL)	Media: ZrO_2
NT2TIZR	231	Size: NuTip (10-200 µL)	Media: TiO_2+ZrO_2
NT2KITPHOS	255	Size: NuTip (10-200 µL)	Media: Selection of TiO_2, ZrO_2, and mixed TiO_2+ZrO_2
NT3TIO	281	Size: NuTip (10-200 µL) LARGE	Media: TiO_2
NT3ZRO	281	Size: NuTip (10-200 µL) LARGE	Media: ZrO_2
NT3TIZR	281	Size: NuTip (10-200 µL) LARGE	Media: TiO_2+ZrO_2

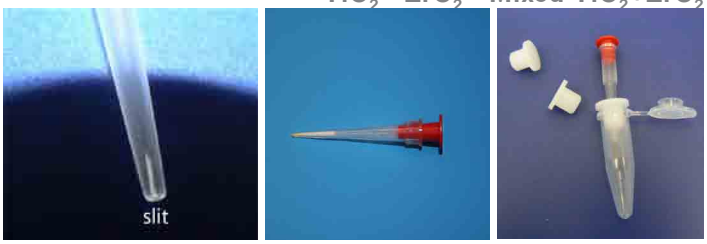
You may also be interested in:

- Protein/Peptide Desalting NuTip (see p. 11)
- Protein/Peptide Enrichment NuTip (see p. 115)
- Glycoprotein/Glycopeptide Enrichment NuTip (see p. 25)
- Antibody Enrichment NuTip (see p. 27)
- Phosphopeptide Standards Kit (see p. 23)

Phosphopeptide Enrichment TopTip™

Micro-spin column (no filter) packed with MOAC media for low concentration phosphopeptide samples

TiO_2 • ZrO_2 • Mixed TiO_2+ZrO_2



- Significantly reduce time and expense of SPE (e.g., can top-load samples and centrifuge)
- Dispersive media with no filter, glue, or polymer: improves binding, sample recovery, and reproducibility
- Metal Oxide Affinity Chromatography (MOAC) TopTip enriches phosphorylated Ser, Tyr, and Thr in a highly sensitive and reproducible way, with minimal nonspecific binding
- Micro-spin column allows precise control over rates of binding and elution

Product description

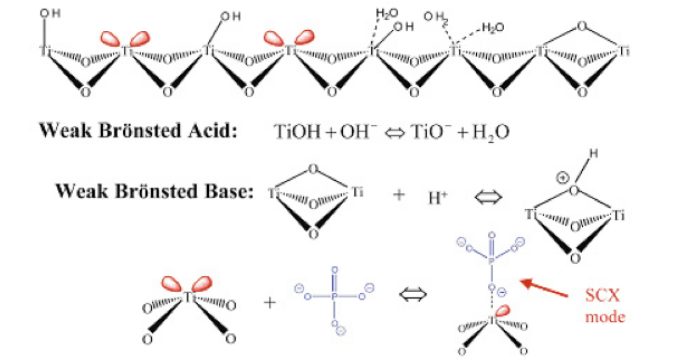
Phosphopeptide Enrichment TopTip micro-spin column enables high-fidelity separation of phosphopeptides. The micro-scale of this technology ensures that phosphopeptides, often in ultra-low concentrations, are not overwhelmed by excessive chromatographic material.

The 1-2 µm slit at the bottom of the TopTip permits liquid to pass through, but retains media. This unique design eliminates the need for a filter – reducing dead volume, loss of sample and contamination risk.

Elution pressure can be generated using any centrifuge (adaptor included), or manually with a syringe.

Media selection

Phosphopeptide Enrichment TopTips contain proprietary MOAC media. The literature suggests only 30% overlap in phosphopeptides isolated by TiO_2 vs. ZrO_2, emphasizing importance of an informed (and perhaps mixed-media) approach to enrichment.



Media	Use for
TiO_2	Selective for multiply phosphorylated peptides
ZrO_2	Selective for mono-phosphorylated peptides
TiO_2+ZrO_2 mixed media	Broad-spectrum

Specifications

Sold in packs of 96 tips. Also available in kits with a sampling of Glygen's three MOAC media (32 tips each of TiO_2, ZrO_2, and TiO_2+Z_rO2 mixed media)

	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
TT1	1 - 10	1 - 10	400 µg	4 mg
TT2	10 - 200	2 - 25	1000 µg	10 mg
TT3	100 - 1000	20 - 1000	5000 µg	50 mg

* No sample volume limit when using included syringe

Selected references

- Rudrabhatla, et al. 'Quantitative phosphoproteomic analysis of neuronal intermediate filament proteins (NF-M/H) in Alzheimer's disease by iTRAQ.' FASEB Journal. 2010 Nov; 24(11): 4396-4407.
- Özlü, Nurhan et al. Binding Partner Switching on Microtubules and Aurora-B in the Mitosis to Cytokinesis Transition. Mol Cell Proteomics, 2010 9: 336-350.

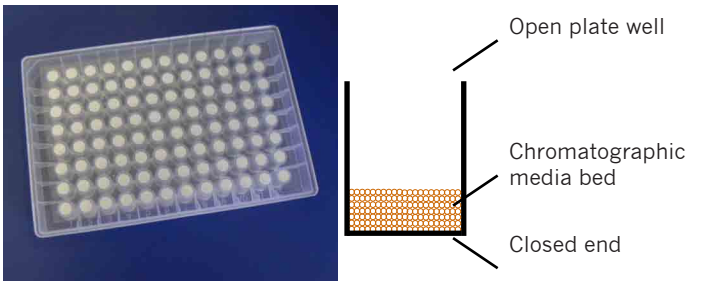
Ordering information

Part no.	Price ($)	Specs	
TT1TIO	243	Size: TopTip (1-10 µL)	Media: TiO_2
TT1ZRO	243	Size: TopTip (1-10 µL)	Media: ZrO_2
TT1TIZR	243	Size: TopTip (1-10 µL)	Media: TiO_2+ZrO_2
TT1KIT-PHOS	269	Size: TopTip (1-10 µL)	Media: Selection of TiO_2, ZrO_2, and mixed TiO_2+ZrO_2
TT2TIO	331	Size: TopTip (10-200 µL)	Media: TiO_2
TT2ZRO	331	Size: TopTip (10-200 µL)	Media: ZrO_2
TT2TIZR	331	Size: TopTip (10-200 µL)	Media: TiO_2+ZrO_2
TT2KIT-PHOS	355	Size: TopTip (10-200 µL)	Media: Selection of TiO_2, ZrO_2, and mixed TiO_2+ZrO_2
TT3TIO	206	Size: TopTip (100-1000 µL)	Media: TiO_2
TT3ZRO	206	Size: TopTip (100-1000 µL)	Media: ZrO_2
TT3TIZR	206	Size: TopTip (100-1000 µL)	Media: TiO_2+ZrO_2

Phosphopeptide Enrichment Lab-in-a-Plate™ Coated Plate

96-well plate coated with MOAC media for multi-sample/automated enrichment

TiO_2 • ZrO_2
[AUTOMATABLE]



- High binding capacity relative to conventional ELISA
- High throughput phosphopeptide enrichment – can be used with most liquid handling platforms

Product description

Phosphopeptide Enrichment Coated Plate is a patented technology for phosphoproteomics.

Coated Plates work like ELISA plates, with Metal Oxide Affinity Chromatography (MOAC) media embedded at the bottom of each well.

Coated plates are SBS standard and come in 96-, 384- and 1536-well formats. The plates are available in polypropylene or polystyrene.

Media selection

Phosphopeptide Enrichment Coated Plates contain proprietary MOAC media.

Media	Use for
TiO_2	Selective for multiply phosphorylated peptides
ZrO_2	Selective for mono-phosphorylated peptides

Specifications

Sold in packs of 5 plates.

	Material	Size	Sample volume (µL)	Binding capacity
NSS	Polystyrene	96-well	25 - 200	2 µg
NSP	Polypropylene	96-well	25 - 200	2 µg
THS	Polystyrene	384-well	10 - 70	500 ng
FES	Polystyrene	1536-well	2 - 10	70 ng

Selected reference

- Brian Roberts, et al: A fluorimetric method for determination of calcineurin activity. Cell Calcium, Volume 43, Issue 5, May 2008, Pages 515-519.

Ordering information

Part no.	Price ($)	Specs		
NSSTIO	249	Size: 96-well	Material: Polystyrene	Media: TiO_2
NSSZRO	249	Size: 96-well	Material: Polystyrene	Media: ZrO_2
NSPTIO	249	Size: 96-well	Material: Polypropylene	Media: TiO_2
NSPZRO	249	Size: 96-well	Material: Polypropylene	Media: ZrO_2
THSTIO	449	Size: 384-well	Material: Polystyrene	Media: TiO_2
THSZRO	449	Size: 384-well	Material: Polystyrene	Media: ZrO_2
FESTIO	749	Size: 1536-well	Material: Polystyrene	Media: TiO_2
FESZRO	749	Size: 1536-well	Material: Polystyrene	Media: ZrO_2

You may also be interested in:

- Phosphopeptide Enrichment Flow-Thru Plate (see p. 24)
- Protein/Peptide Desalting Coated Plate (see p. 13)
- Protein/Peptide Enrichment Coated Plate (see p. 17)
- Phospholipid Removal Coated Plate (see p. 33)
- Phospho-molecule HPLC Column (see p. 39)

Phosphopeptide Standards Set

Set of phosphopeptide aliquots for equipment/method standardization

Product description

This is an essential standardization kit for phosphoproteomic research, containing pure amounts of different structures of standard phosphopeptides.

Specifications

Each kit contains 5 vials for phosphopeptide equipment/method standardization:

- 4 phosphopeptide vials: each with 10 µg of pure 1-, 2-, 3-, and 4-phospho group phosphopeptide molecules
- 1 control vial: with 10 µg of non-phospho molecule

Sequences of phosphopeptide standards available upon request.

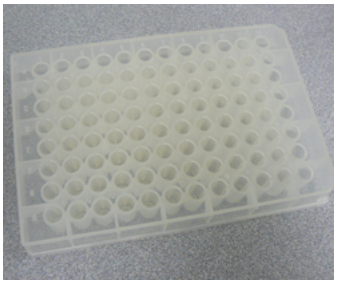
Ordering information

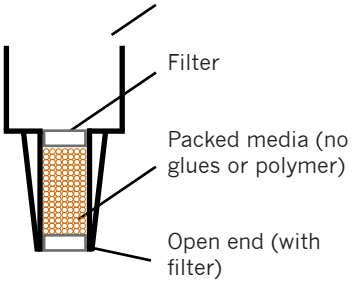
Part no.	Price ($)	Specs	
PHOSPHO STD01	138	Phosphopeptide Standards Kit	Configuration: Mono-, Di-, Tri-, Tetra-Phosphorylated

Phosphopeptide Enrichment Lab-in-a-Plate™ Flow-Thru Plate

96-well plate for vacuum/centrifuge flow-through chromatographic separation with enrichment media

TiO_2 • ZrO_2 **[AUTOMATABLE]**





- High binding capacity coupled with one of the smallest chromatographic bed volume on the market – ideal for analysis of low concentration phosphopeptides
- Optimized for high-throughput screening applications

Product description

Phosphopeptide Enrichment Flow-Thru Plates are the ideal equipment for vacuum/centrifuge powered SPE of small volumes of sample using Metal Oxide Affinity Chromatography (MOAC) media (for high throughput applications). The Flow-Thru Plate's unique design allows sample to flow from the top of the well, through the media bed, and out the well bottom.

Media selection

Phosphopeptide Enrichment Lab-in-a-Plate Flow-Thru Plate is available with Glygen's MOAC media:

Media	Use for
TiO_2	Selective for multiply phosphorylated peptides
ZrO_2	Selective for mono-phosphorylated peptides

Specifications

Sold in packs of one 96-well plate.

	Size	Media bed volume (µL)	Binding capacity
FNS	96-well	40	2000 µg
MFNS	96-well	5 - 7	400 µg
iP	96-well	1	1 µg

Ordering information

Part no.	Price ($)	Specs	
FNSTIO	249	Media bed vol: 40 µL	Media: TiO_2
FNSZRO	249	Media bed vol: 40 µL	Media: ZrO_2
MFNSTIO	210	Media bed vol: 7 µL	Media: TiO_2
MFNSZRO	210	Media bed vol: 7 µL	Media: ZrO_2
iPTIO	265	Media bed vol: 1 µL	Media: TiO_2
iPZRO	265	Media bed vol: 1 µL	Media: ZrO_2

You may also be interested in:

- Protein/Peptide Desalting Flow-Thru Plate (see p. 12)
- Protein/Peptide Enrichment Flow-Thru Plate (see p. 16)
- Antibody Enrichment Flow-Thru Plate (see p. 26)
- CrashTip and CrashPlate (see p. 32)
- Phosphopeptides Standards Kit (see p. 21)
- Phospho-molecule HPLC Column (see p. 39)
- Trap Column (see p. 40)

GlyVac™ Vacuum Manifold

Optimized vacuum for Lab-in-a-Plate Flow-Thru Plate sample purification

- High-clarity polycarbonate components allow various filtration processes to be monitored visually
- Accommodates a wide variety of different columns and SBS-format, 96- and 384-well plates
- Easy to maintain, resistant to breakage/degradation

Specifications

Manifold base is injection molded from ABS plastic; top and middle support molded from polycarbonate. 96-well plate support constructed from stainless steel

.

Ordering information

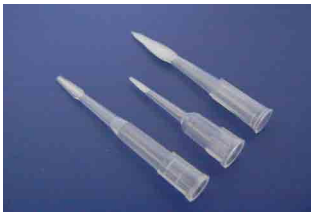
Part no.	Price ($)	Specs
VAC001	455	Configuration: Vacuum manifold only
VAC002	625	Configuration: Vacuum manifold with concentration adaptor

Glycoprotein/Glycopeptide Enrichment NuTip™

Micro-SPE cartridge for enrichment low concentration and low volume Glycoprotein/glycopeptide samples

SAX• Carbon • Carbon+C18 • Borate • TiO_2

[AUTOMATABLE]



- Simple, fast sample prep of glycopeptides, glycoproteins, and oligosaccharides with minimal loss
- Enrichment media optimized to characteristics of target molecule and sample
- Media directly embedded on inner cartridge wall (no matrix) for reduced contamination, no back pressure

Product description

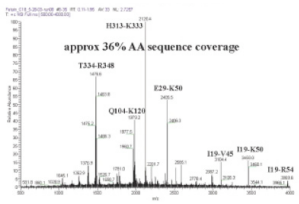
Glycoprotein/Glycopeptide Enrichment NuTip is based on Glygen's flagship NuTip micro-SPE technology, enabling separation of low-concentration/volume samples by maximizing media-sample contact.

Enrichment media is embedded directly in the inner surface of the tip: there are no polymers, glues or scaffolding. This proprietary design prevents contamination or permeability problems common in competitor tips.

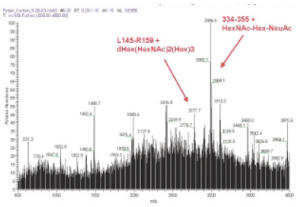
Data

Spectra of 500 fmol Bovine Fetuin after purification:

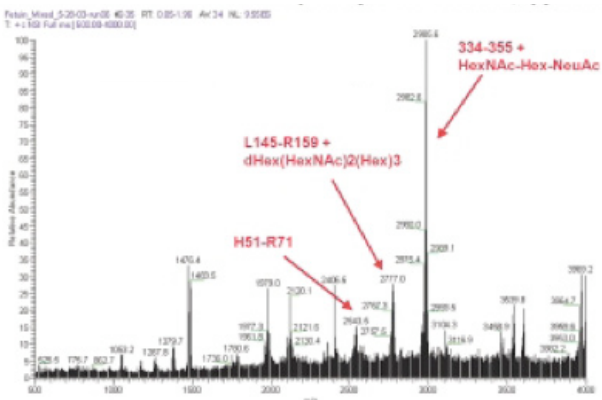
Purified by NuTip C18



Purified by NuTip Carbon



Purified by NuTip Carbon +C18: Additional 7% AA sequence coverage vs. C18 purification alone



Data courtesy of Ashok Shukla (Glygen)

Media selection

Protein/Peptide Enrichment NuTips are available with a wide selection of chromatographic media:

Media	Use for
SAX	Sulfated glycan
Carbon (Graphite)	Both hydrophobic and hydrophilic
Carbon+C18	Both hydrophobic and hydrophilic
Borate	Cys- diodes
TiO_2	Sialic acid-containing

Specifications

Sold in packs of 96 tips.

	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
NT1	1 - 10	0.5 - 10	1 µg	30 µg
NT2	10 - 200	2 - 25	2.5 µg	75 µg
NT3	10 - 200	5 - 50	15 µg	400 µg

Selected references

- CAR: Susan Grass, Cheryl F. Lichti, R. Reid Townsend, Julia Gross, and Joseph W. St. Geme, III The Haemophilus influenzae HMW1C Protein Is a Glycosyltransferase That Transfers Hexose Residues to Asparagine Sites in the HMW1 Adhesin PLoS Pathog. 2010 May; 6(5): e1000919.
- CAR: Wouter Laroy, Roland Contreras and Nico Callewaert. Glycome mapping on DNA, sequencing equipment. Nature Protocols 1, 397 - 405 (2006)
- CAR+C18: Hiroto Hirayama, Junichi Seino, Toshihiko Kitajima, Yoshifumi Jigami and Tadashi Suzuki Free Oligosaccharides to Monitor Glycoprotein Endoplasmic Reticulumassociated Degradation in Saccharomyces cerevisiae The Journal of Biological Chemistry, 285, 12390-12404.

Ordering information

Part no.	Price ($)	Specs	
NT1CAR	193	Size: NuTip (1-10 µL)	Media: Carbon (Graphite)
NT1MC18	193	Size: NuTip (1-10 µL)	Media: C18+Carbon (Graphite)
NT1SAX	156	Size: NuTip (1-10 µL)	Media: Silica Strong Anion (SAX)
NT1BOR	206	Size: NuTip (1-10 µL)	Media: Borate
NT1TIO	193	Size: NuTip (1-10 µL)	Media: TiO_2
NT2CAR	231	Size: NuTip (10-200 µL)	Media: Carbon (Graphite)
NT2MC18	231	Size: NuTip (10-200 µL)	Media: C18+Carbon (Graphite)
NT2SAX	181	Size: NuTip (10-200 µL)	Media: Silica Strong Anion (SAX)
NT2BOR	243	Size: NuTip (10-200 µL)	Media: Borate
NT2TIO	231	Size: NuTip (10-200 µL)	Media: TiO_2
NT3CAR	281	Size: NuTip (10-200 µL) LARGE	Media: Carbon (Graphite)
NT3MC18	281	Size: NuTip (10-200 µL) LARGE	Media: C18+Carbon (Graphite)
NT3SAX	281	Size: NuTip (10-200 µL) LARGE	Media: Silica Strong Anion (SAX)
NT3TIO	281	Size: NuTip (10-200 µL) LARGE	Media: TiO_2

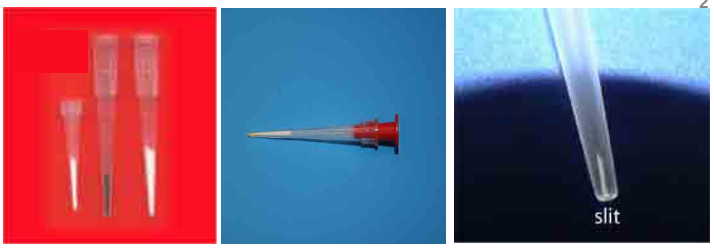
You may also be interested in:

- ConA Lectin (ConA, WGA) Glycoprotein/Glycopeptide Enrichment TopTip (see p. 26)

Glycoprotein/Glycopeptide Enrichment TopTip™

Micro-spin column (no filter) for low concentration and low volume glycopeptide/-protein samples

ConA lectin • WGA lectin • Silica/POROS SAX• Carbon • Carbon+C18 • Cellulose • Borate • TiO_2



- Significantly reduce time and expense of SPE (e.g., can top-load samples and centrifuge)
- Dispersive media with no filter, glue, or polymer: improves binding, sample recovery, and reproducibility
- Immobilized lectin TopTip enriches glycosylated peptides/proteins, in a highly sensitive and reproducible way, with minimal non-specific binding
- Micro-spin column allows precise control over rates of binding and elution
- Ideal for enriching small sample concentrations

Product description

Glycoprotein/Glycopeptide Enrichment TopTip micro-spin column, allows selective recovery of glycosylated peptides/proteins known to have important biological function in immune regulation, inflammation, cell-to-cell adhesion, and cell signaling.

The fine 1-2 µm slit at the bottom of the TopTip permits liquid to pass through, but retains media in the tip. This eliminates the need for a filter – reducing dead volume, loss of sample and contamination risk.
Elution pressure can be generated using any centrifuge (adaptor included), or manually with a syringe.

Media selection

Media	Use for
ConA lectin	Alpha-linked mannose and terminal glucose residues
WGA lectin	N-Acetyl glucosamine (GlcNAc) groups and sialic acid
SAX	Sulfated glycan
Carbon (Graphite)	Both hydrophobic and -philic
Carbon+C18	Both hydrophobic and -philic
Cellulose	Hydrophilic interaction
Borate	Cys- diodes
TiO_2	Sialic acid-containing

Specifications

Sold in packs of 96, except for TT3, which are sold in packs of 20.

	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
TT1	1 - 10	1 - 10	400 µg	4 mg
TT2	10 - 200	2 - 25	1000 µg	10 mg
TT3	100 - 1000	20 - 1000	5000 µg	50 mg

* No sample volume limit when using included syringe

Selected references

- Lectins: N. I. Taranenko, et al. Effects of Lectins Affinity Chromatography on Glycoproteins Enrichment Using AP-MALDI Ion Trap Mass Spectrometry. Proceedings of 52nd ASMS Conference on Mass Spectrometry and Allied Topics (2004).
- SAX: Ming Lei, et al. Sequential Enrichment of Sulfated Glycans by Strong Anion-Exchange Chromatography Prior to Mass Spectrometric Measurements. J Am Soc Mass Spectrom, 21(2010), p. 348-357.

Ordering information

Part no.	Price ($)	Specs	
TT1CONA	318	Size: TopTip (1-10 µL)	Media: Lectin: ConA
TT1WGA	443	Size: TopTip (1-10 µL)	Media: Lectin: WGA
TT1SAX	206	Size: TopTip (1-10 µL)	Media: Silica Strong Anion (SAX)
TT1PSA	243	Size: TopTip (1-10 µL)	Media: POROS Strong Anion exchanger
TT1CAR	243	Size: TopTip (1-10 µL)	Media: Carbon (Graphite)
TT1MC18	243	Size: TopTip (1-10 µL)	Media: C18+Carbon (Graphite)
TT1CEL	206	Size: TopTip (1-10 µL)	Media: Cellulose
TT1BOR	306	Size: TopTip (1-10 µL)	Media: Borate
TT1TIO	243	Size: TopTip (1-10 µL)	Media: TiO_2
TT2CONA	443	Size: TopTip (10-200 µL)	Media: Lectin: ConA
TT2WGA	568	Size: TopTip (10-200 µL)	Media: Lectin: WGA
TT2SAX	281	Size: TopTip (10-200 µL)	Media: Silica Strong Anion (SAX)
TT2PSA	331	Size: TopTip (10-200 µL)	Media: POROS Strong Anion exchanger
TT2CAR	331	Size: TopTip (10-200 µL)	Media: Carbon (Graphite)
TT2MC18	331	Size: TopTip (10-200 µL)	Media: C18+Carbon (Graphite)
TT2CEL	281	Size: TopTip (10-200 µL)	Media: Cellulose
TT2BOR	456	Size: TopTip (10-200 µL)	Media: Borate
TT2TIO	331	Size: TopTip (10-200 µL)	Media: TiO_2
TT3CONA	318	Size: TopTip (10-200 µL)	Media: Lectin: ConA
TT3WGA	443	Size: TopTip (10-200 µL)	Media: Lectin: WGA
TT3SAX	156	Size: TopTip (100-1000 µL)	Media: Silica Strong Anion (SAX)
TT3PSA	206	Size: TopTip (100-1000 µL)	Media: POROS Strong Anion exchanger
TT3CAR	206	Size: TopTip (100-1000 µL)	Media: Carbon (Graphite)
TT3MC18	206	Size: TopTip (100-1000 µL)	Media: C18+Carbon (Graphite)
TT3CEL	156	Size: TopTip (100-1000 µL)	Media: Cellulose
TT3TIO	206	Size: TopTip (100-1000 µL)	Media: TiO_2

Antibody Enrichment NuTip™

Protein A embedded micro-SPE cartridges for enrichment of low concentration IgG antibody samples

Protein A

[AUTOMATABLE]

- Simple, fast enrichment with minimal sample loss
- Protein A technology delivers high-yield purification of IgG from serum and other fluids
- Media directly embedded on inner cartridge wall (no matrix) for reduced contamination, no back pressure
- Different sizes to accommodate samples of varying volumes/concentrations (e.g., as small as 0.1 µL)

Product description

Antibody Enrichment NuTip couples Protein A affinity technology with Glygen's patented NuTip micro-SPE technology. This enables separation of low-concentration antibody samples by maximizing media surface area in contact with the sample.

Immobilized Protein A is embedded directly in the inner surface of the tip: there are no polymers, glues or scaffolding. This proprietary design prevents contamination or permeability problems common in competitor tips.

Media selection

Antibody Enrichment NuTip is available with Protein A

Specifications

Sold in packs of 96 tips.

	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
NT1	1 - 10	0.5 - 10	1 µg	30 µg
NT2	10 - 200	2 - 25	2.5 µg	75 µg

Ordering information

Part no.	Price ($)	Specs	
NT1PRA	206	Size: NuTip (1-10 µL)	Media: Protein A
NT2PRA	281	Size: NuTip (10-200 µL)	Media: Protein A

Antibody Enrichment TopTip™

Micro-spin column (no filter) for enrichment of antibody samples

Protein A • Protein G

- Significantly reduce time and expense of SPE (e.g., can top-load samples and centrifuge)
- Dispersive media with no filter, glue, or polymer: improves binding, sample recovery, and reproducibility
- Protein A/G technologies deliver high-yield purification of IgG from small samples of serum/other fluids
- Micro-spin column allows precise control over rates of binding and elution

Product description

Antibody Enrichment TopTip enables selective Protein A/G affinity reactions in a micro-spin column format. The fine 1-2 µm slit at the bottom of the TopTip permits liquid to pass through (with pressure via centrifuge or syringe), but retains media in the tip. This eliminates need for a filter – reducing dead volume, loss of sample and contamination risk.

Media selection

Protein A and Protein G differ in their ability to bind antibodies of different species and subclasses.

Specifications

Sold in packs of 96 tips.

	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
TT1	1 - 10	1 - 10	400 µg	4 mg
TT2	10 - 200	2 - 25	1000 µg	10 mg

* No sample volume limit when using included syringe

Selected Reference

- E. Lundberg, et al. A novel method for reproducible fluorescent labeling of small amounts of antibodies on solid phase. J Immunological Methods, Issues 1-2, April 2007, p. 40-49.

Ordering information

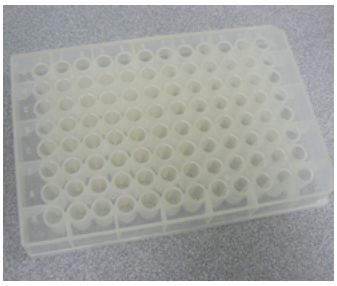
Part no.	Price ($)	Specs	
TT1PRA	281	Size: TopTip (1-10 µL)	Media: Protein A
TT1PRG	318	Size: TopTip (1-10 µL)	Media: Protein G
TT2PRA	368	Size: TopTip (10-200 µL)	Media: Protein A
TT2PRG	493	Size: TopTip (10-200 µL)	Media: Protein G

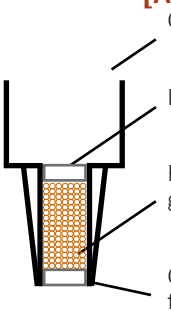
Antibody Enrichment
Lab-in-a-Plate™ Flow-Thru Plate

96-well plate for vacuum/centrifuge flow-through separation with immobilized Protein A media

Protein A • Protein G

[AUTOMATABLE]





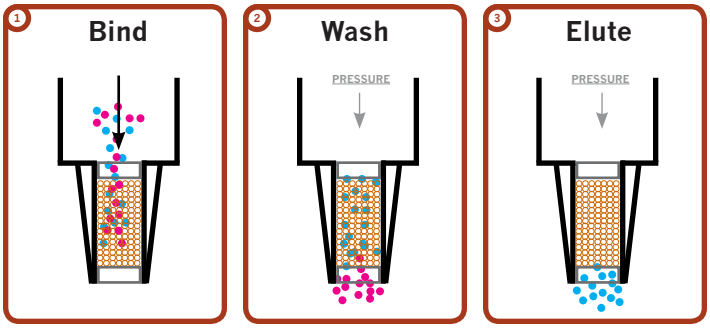
- High binding capacity coupled with one of the smallest chromatographic bed volume on the market – ideal for analysis of low concentration samples
- Optimized for high-throughput screening applications

Product description

Antibody Enrichment Flow-Thru Plates are the ideal equipment for vacuum/centrifuge powered SPE of antibody sample using immobilized Protein A (for high-throughput applications).

The Flow-Thru Plate's unique design allows sample to flow from the top of the well, through the chromatographic bed, and out the bottom of each well.

How it works



Sample loaded into Flow-Thru Plate well: target molecule binds media

Pressure (centrifuge/vacuum) forces impurities out of well bottom; target remains

Target molecules released from media; purified sample collected

Media selection

Phosphopeptide Enrichment Flow-Thru Plates contain immobilized Protein A or Protein G.

Specifications

Sold in packs of one 96-well plate.

	Size	Media bed volume (µL)	Binding capacity
FNS	96-well	40	2000 µg
MFNS	96-well	5 - 7	400 µg

Ordering information

Part no.	Price ($)	Specs	
FNSPRA	449	Media bed vol: 40 µL	Media: Protein A
FNSPRG	649	Media bed vol: 40 µL	Media: Protein G
MFNSPRA	359	Media bed vol: 7 µL	Media: Protein A
MFNSPRG	399	Media bed vol: 7 µL	Media: Protein G

You may also be interested in:

- Protein/Peptide Desalting Flow-Thru Plate (see p. 12)
- Protein/Peptide Enrichment Flow-Thru Plate (see p. 16)
- Phosphopeptide Enrichment Flow-Thru Plate (see p. 22)

GlyVac™ Vacuum Manifold

Optimized vacuum for Flow-Thru Plate purification

- High-clarity polycarbonate components allow various filtration processes to be monitored visually
- Accommodates a wide variety of different columns and SBS-format, 96- and 384-well plates
- Easy to maintain, resistant to breakage/degradation

Specifications

Manifold base is injection molded from ABS plastic; top and middle support molded from polycarbonate. 96-well plate support constructed from stainless steel.

Ordering information

Part No.	Price ($)	Specs
VAC001	455	Configuration: Vacuum manifold only
VAC002	625	Configuration: Vacuum manifold with concentration adaptor

DNA Purification NuTip™

Micro-SPE cartridges embedded with DNAPure™ media for desalting of DNA/PCR samples

DNAPure™ media (Anion Exchange, Silica)

[AUTOMATABLE]

- Simple, fast enrichment with minimal sample loss
- DNAPure media delivers excellent desalting efficiency, exceptional recovery, and superior processing speed
- Media directly embedded on inner cartridge wall (no matrix) for reduced contamination, no back pressure
- Different sizes to accommodate samples of varying volumes/concentrations (e.g., as small as 0.1 µL)

Product description

DNA Purification NuTip is based on Glygen's patented NuTip micro-SPE technology, driving exceptional desalting of DNA/PCR product samples, excellent recovery, and superior processing speed.

The DNAPure media is embedded directly in the inner surface of the tip: there are no polymers, glues or scaffolding. This proprietary design prevents contamination or permeability problems common in competitor tips.

Media selection

DNA Purification NuTip is available with DNAPure Weak Anion Exchange or Silica-based media.

Specifications

Sold in packs of 96 tips.

	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
NT1	1 - 10	0.5 - 10	1 µg	30 µg
NT2	10 - 200	2 - 25	2.5 µg	75 µg
NT3	10 - 200	5 - 50	15 µg	400 µg

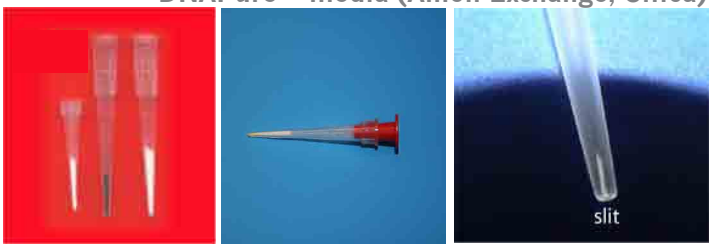
Ordering information

Part no.	Price ($)	Specs	
NT1DNA	156	Size: NuTip (1-10 µL)	Media: DNAPure WAX
NT1DNA1	156	Size: NuTip (1-10 µL)	Media: DNAPure Silica
NT2DNA	181	Size: NuTip (10-200 µL)	Media: DNAPure WAX
NT2DNA1	181	Size: NuTip (10-200 µL)	Media: DNAPure Silica
NT3DNA	281	Size: NuTip (10-200 µL) LARGE	Media: DNAPure WAX
NT3DNA1	281	Size: NuTip (10-200 µL) LARGE	Media: DNAPure Silica

DNA Purification TopTip™

Micro-spin column (no filter) to desalt DNA/PCR

DNAPure™ media (Anion Exchange, Silica)



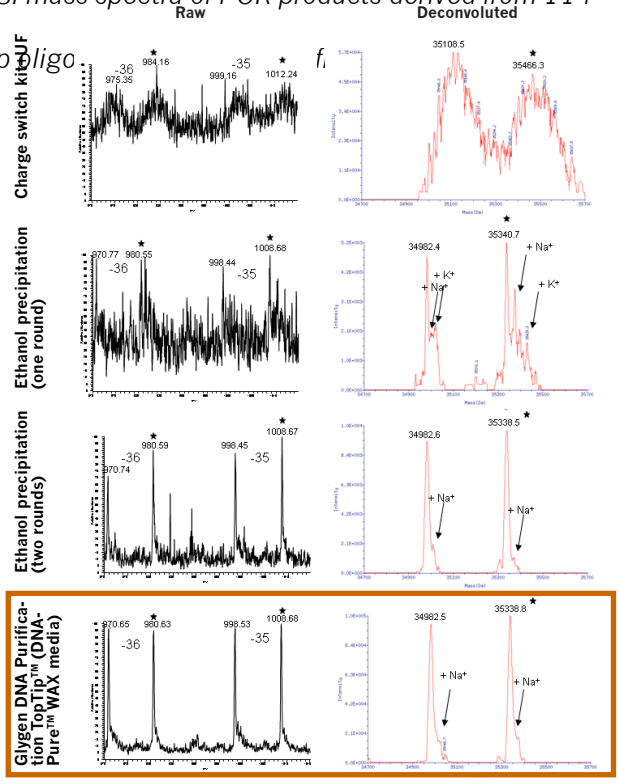
- Significantly reduce time and expense of SPE (e.g., can top-load samples and centrifuge)
- Dispersive media with no filter, glue, or polymer: improves binding, sample recovery, and reproducibility
- DNAPure media enables excellent desalting efficiency, exceptional recovery, and superior processing speed
- Micro-spin column allows precise control over rates of binding and elution
-

Product description

Glygen's innovative DNA Purification TopTips enable scientists to purify DNA with excellent desalting efficiency, exceptional recovery, and superior processing speed. The tips are innovative micro-spin columns containing Glygen's proprietary DNAPure Weak Anion Exchange or Silica-based media.

Data

ESI mass spectra of PCR products derived from 114-bp oligo



DNA Purification TopTip™ (CONTINUED)

Purification yields, desalting capacity, and preparation time (hours) for each purification method tested:

Purification method	Yield (%) ± SD	Desalting capacity[a]	Sample prep time[b]
Ethanol precipitation (1 round)	69 ± 5	+	16 h
Ethanol precipitation (2 rounds)	34 ± 1	+++	24 h
Ethanol precipitation+Ultrafiltration	45 ± 11	+	16.6 h
Ultrafiltration	95 ± 20	-	0.6 h
Charge Switch kit+Ultrafiltration	48 ± 13	-	1 h
Silica resin–based kit+Ultrafiltration	61 ± 10	-	1 h
Glygen DNA Purification Top Tip™ (DNAPure™ WAX media)	67 ± 4	+++	0.75 h

[a] -: no desalting; +: moderate desalting, a few adducts remained; and +++: high desalting efficiency.
[b] Estimates.
Data courtesy of Francois Fenaille (CEA, France)

Media selection

DNA Purification TopTip is available with DNAPure Weak Anion Exchange or Silica-Based media.

Specifications

Sold in packs of 96 tips.

	Tip vol. (µL)	Sample vol. (µL)*	Binding capacity	Media amount
TT1	1 - 10	1 - 10	400 µg	4 mg
TT2	10 - 200	2 - 25	1000 µg	10 mg

* No sample volume limit when using included syringe

Selected references

- Manduzio, et al. Comparison of approaches for purifying and desalting polymerase chain reaction products prior to electrospray ionization mass spectrometry. Analytical Biochemistry, March 15, 2010

Ordering information

Part no.	Price ($)	Specs	
TT1DNA	206	Size: NuTip (1-10 µL)	Media: DNAPure WAX
TT1DNA1	206	Size: NuTip (1-10 µL)	Media: DNAPure Silica
TT2DNA	281	Size: NuTip (10-200 µL)	Media: DNAPure WAX
TT2DNA1	281	Size: NuTip (10-200 µL)	Media: DNAPure Silica

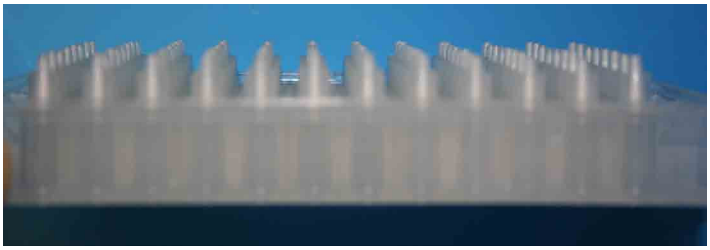
You may also be interested in:

- CapTip (see p. 32)

DNA Purification Lab-in-a-Plate™ Flow-Thru Plate

96-well plate for vacuum/centrifuge flow-through desalting of DNA/PCR samples

DNAPure™ media (Anion Exchange, Silica)
[AUTOMATABLE]



- High binding capacity coupled with one of the smallest chromatographic bed volume on the market – ideal for analysis of low concentration phosphopeptides
- Optimized for high-throughput screening applications

Product description

DNA Purification Flow-Thru Plates are the ideal equipment for vacuum/centrifuge powered purification of PCR products using Glygen's proprietary DNAPure media. The Flow-Thru Plate's unique design allows sample to flow from the top of the well, through the chromatographic bed, and out the bottom of each well.

Media selection

DNA Purification Flow-Thru Plate is available with DNAPure Weak Anion Exchange or Silica-based media.

Specifications

Sold in packs of one 96-well plate.

	Size	Media bed volume (µL)	Binding capacity
FNS	96-well	40	2000 µg
MFNS	96-well	5 - 7	400 µg

Ordering information

Part no.	Price ($)	Specs	
FNSDNA	249	Media bed vol: 40 µL	Media: DNAPure WAX
FNSDNA1	249	Media bed vol: 40 µL	Media: DNAPure Silica
MFNSDNA	210	Media bed vol: 7 µL	Media: DNAPure WAX
MFNSDNA1	210	Media bed vol: 7 µL	Media: DNAPure Silica

You may also be interested in:

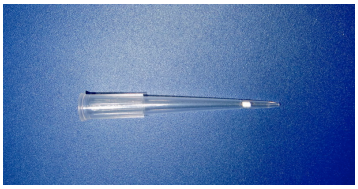
- GlyVac Vacuum Manifold (see p. 12 or 26)

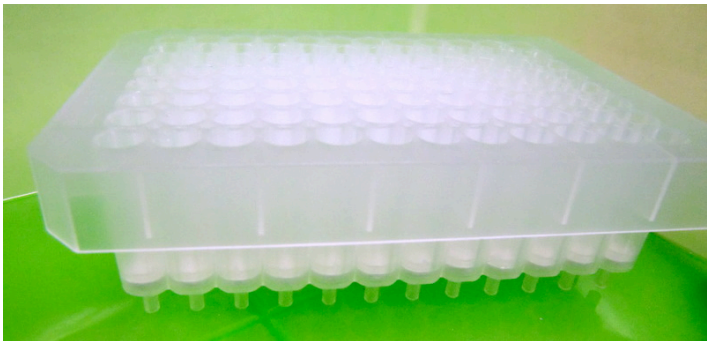
CrashTip™ and CrashPlate

Innovative tools for protein precipitation and phospholipid removal to isolate small molecules

Empty • Mixed TiO_2+ZrO_2

[AUTOMATABLE]





- Convenient, one-step protein precipitation and removal of phospholipids
- Separation of volumes as low as a few nanoliters

Product description

The CrashTip and CrashPlate provide effective and efficient precipitation of proteins. The 96-well CrashPlate (300 µL - 1000 µL wells) and the CrashTip™ micro spin column (10 - 200 µL) have specially designed filters allowing liquid to pass through during centrifugation, but not during shaking.

Media selection

The CrashTip and CrashPlate are empty (for protein precipitation only) or contain a mixed TiO_2+ZrO_2 media (for protein precipitation and phospholipid removal)

Specifications

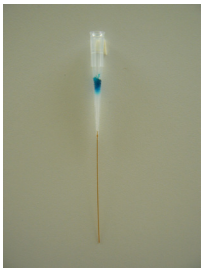
CrashTips are sold in packs of 96, and are 10 - 200 µL in volume. CrashPlates are sold in packs of 1.

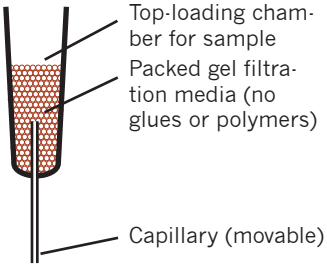
Ordering information

Part no.	Price ($)	Specs	
ST2EMT	155	Size: CrashTip (10-200 µL)	Media: Empty
ST2TIZR	295	Size: CrashTip (10-200 µL)	Media: TiO_2+ZrO_2
CP2EMT1	99	Size: CrashPlate (96-well)	Media: Empty
CP2TIZR1	259	Size: CrashPlate (96-well)	Media: TiO_2+ZrO_2

CapTip™

Gel filtration tip with movable capillary for targeted collection of concentrated fractions





- Enables gel filtration separation of peptides, nucleotides, or small molecules into size-based fractions
- Efficient and clean collection of fractions without repeated elution steps and/or excessive dilution

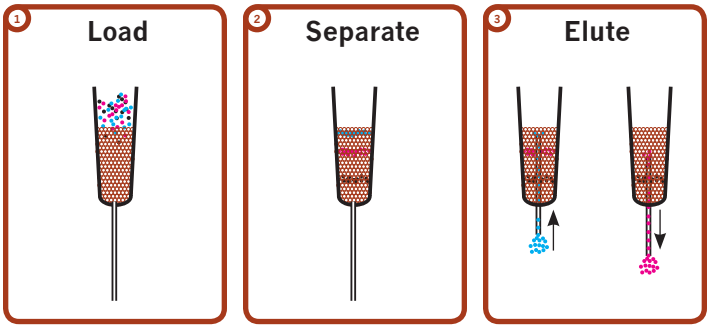
Product description

CapTip enables gel filtration and collection of concentrated fractions within its unique Capillary-in-a-Tip™ format - ideal for small molecular weight molecules.

Unlike mainstream methods requiring repeated elution steps and resulting in extremely dilute small-molecular weight fractions, the CapTip allows efficient and clean collection of concentrated fractions.

The capillary can be moved vertically within the media (e.g., along the length of the tip gel-bed). This allows elution of different fractions along the vertical axis of the gel without significant dilution

How it works



Sample mixture loaded into CapTip

Gel filtration media separates mixture by particle size

Collect fractions adjusting capillary height

Specifications

Sold in packs of 24 or 96 tips.

Ordering information

Part no.	Price ($)	Specs
CAPC001	125	Quantity: Pack of 24
CAPC002	380	Quantity: Pack of 96

Phospholipid Removal NuTip™

Micro-SPE cartridges for broad-spectrum phospholipid removal to improve small molecule bioanalysis

Mixed TiO_2+ZrO_2
[AUTOMATABLE]

- Simple, fast phospholipid capture to eliminate ion-suppression in mass spectroscopy analysis
- Proprietary TiO_2+ZrO_2 mixed media optimized for broad-spectrum phospholipid removal
- Media embedded on inner wall (no glues) to eliminate contamination, back pressure, and sample loss
- Can be combined in series with protein precipitation CrashTips for one-step sample purification

Product description

Phospholipid Removal NuTip couples metal oxide affinity chromatography (MOAC) with Glygen's patented NuTip micro-SPE technology. This enables efficient capture of phospholipids from small molecule samples, preventing ion-suppression in mass spec analysis (which often leads to low recovery and reproducibility).

Glygen's unique TiO_2+ZrO_2 mixed media (which captures a broad spectrum of phospholipids) is embedded directly in the inner surface of the tip: there are no polymers or glues. This proprietary design prevents contamination or permeability problems common in competitor tips.

Media selection

Available with TiO_2+ZrO_2 mixed media

Specifications

Sold in packs of 96 tips.

	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
NT1	1 - 10	0.5 - 10	1 µg	30 µg
NT2	10 - 200	2 - 25	2.5 µg	75 µg
NT3	10 - 200	5 - 50	15 µg	400 µg

Ordering information

Part no.	Price ($)	Specs	
NT1TIZR	193	Size: NuTip (1-10 µL)	Media: TiO_2+ZrO_2
NT2TIZR	231	Size: NuTip (10-200 µL)	Media: TiO_2+ZrO_2
NT3TIZR	281	Size: NuTip (10-200 µL) LARGE	Media: TiO_2+ZrO_2

Phospholipid Removal TopTip™

Micro-spin column (no filter) for removal of phospholipids from small molecule samples

Mixed TiO_2+ZrO_2

- TiO_2+ZrO_2 mixed media delivers effective separation of phospholipids from samples of serum/other fluids
- Micro-spin column format has no filters, glues, polymers: reducing sample loss and contamination risk

Product description

Phospholipid Removal TopTip enables broad-spectrum phospholipid capture in a micro-spin column format.

The fine 1-2 µm slit at the bottom of the TopTip permits liquid to pass through (with pressure via centrifuge or syringe), but retains the unique TiO_2+ZrO_2 mixed media in the tip. This eliminates need for a filter – reducing dead volume, loss of sample and contamination risk.

Media selection

Available with TiO_2+ZrO_2 mixed media

Specifications

Sold in packs of 96 tips.

	Tip vol. (µL)	Sample vol. (µL)*	Binding capacity	Media amount
TT1	1 - 10	1 - 10	400 µg	4 mg
TT2	10 - 200	2 - 25	1000 µg	10 mg
TT3	100 - 1000	20 - 1000	5000 µg	50 mg

* No sample volume limit when using included syringe

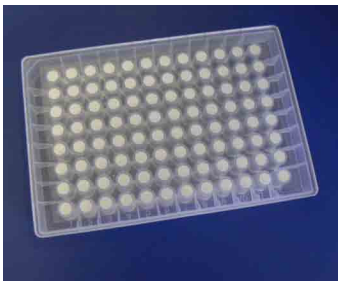
Ordering information

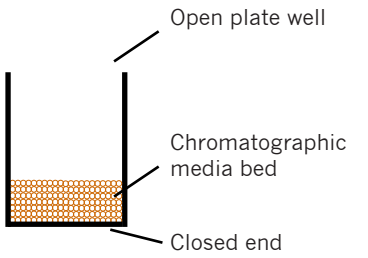
Part no.	Price ($)	Specs	
TT1TIZR	243	Size: TopTip (1-10 µL)	Media: TiO_2+ZrO_2
TT2TIZR	331	Size: TopTip (10-200 µL)	Media: TiO_2+ZrO_2
TT3TIZR	206	Size: TopTip (100-1000 µL)	Media: TiO_2+ZrO_2

Phospholipid Removal Lab-in-a-Plate™ Coated Plate

96-well plate coated with TiO_2+ZrO_2 media for multi-sample/automated phospholipid removal

Mixed TiO_2+ZrO_2 [AUTOMATABLE]





- Contain TiO_2+ZrO_2 mixed media optimized for broad-spectrum phospholipid capture
- High throughput phospholipid capture – can be used with most liquid handling platforms

Product description

Phospholipid Removal Coated Plate is a patented technology for small molecule purification.

Coated Plates work like ELISA plates, with Glygen's unique TiO_2+ZrO_2 mixed media (which captures a broad spectrum of phospholipids) embedded at the bottom of each well.

Media selection

Plates contain TiO_2+ZrO_2 mixed media optimized for broad-spectrum phospholipid capture.

Specifications

Sold in packs of 5 plates.

	Material	Size	Sample volume (µL)	Binding capacity
NSS	Polystyrene	96-well	25 - 200	2 µg
NSP	Polypropylene	96-well	25 - 200	2 µg
THS	Polystyrene	384-well	10 - 70	500 ng
FES	Polystyrene	1536-well	2 - 10	70 ng

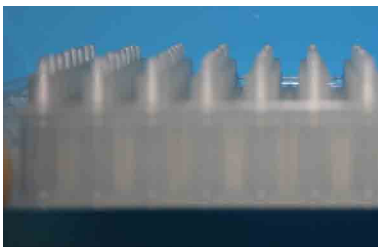
Ordering information

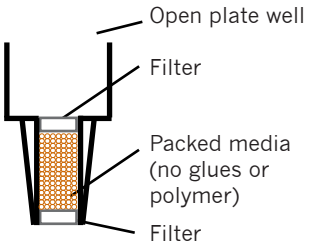
Part no.	Price ($)	Specs		
NSSTIZR	249	Size: 96-well	Material: Polystyrene	Media: TiO_2+ZrO_2
NSPTIZR	249	Size: 96-well	Material: Polypropylene	Media: TiO_2+ZrO_2
THSTIZR	449	Size: 384-well	Material: Polystyrene	Media: TiO_2+ZrO_2
FESTIZR	749	Size: 1536-well	Material: Polystyrene	Media: TiO_2+ZrO_2

Phospholipid Removal Lab-in-a-Plate™ Flow-Thru Plate

96-well plate for vacuum/centrifuge flow-through phospholipid capture

Mixed TiO2+ZrO2 [AUTOMATABLE]





- Ideal for phospholipid removal from serum or plasma in pharmaceutical bioanalysis
- High binding capacity coupled with one of the smallest chromatographic bed volume on the market
- Optimized for high-throughput screening applications

Product description

Phosphopeptide Enrichment Flow-Thru Plates are the ideal equipment for vacuum/centrifuge powered capture of phospholipids from plasma, serum, and whole blood. The plates utilize phospholipids' selective affinity for Glygen's unique TiO_2+ZrO_2 mixed media. The Flow-Thru Plate's unique design allows sample to flow from the top of the well, through the media bed, and out the well bottom.

Media selection

Plates contain TiO_2+ZrO_2 mixed media optimized for broad-spectrum phospholipid capture.

Specifications

Sold in packs of one 96-well plate.

	Size	Media bed volume (µL)	Binding capacity
FNS	96-well	40	2000 µg
MFNS	96-well	5 - 7	400 µg
iP	96-well	1	1 µg

Ordering information

Part no.	Price ($)	Specs	
FNSTIZR	249	Media bed vol: 40 µL	Media: TiO_2+ZrO_2
MFNSTIZR	210	Media bed vol: 7 µL	Media: TiO_2+ZrO_2
iPTIZR	265	Media bed vol: 1 µL	Media: TiO_2+ZrO_2

Small Molecule Enrichment NuTip™

Micro-SPE cartridge for enrichment of low concentration and low volume small molecule samples

C18 • C8 • C4 • Carbon • HILIC

[AUTOMATABLE]

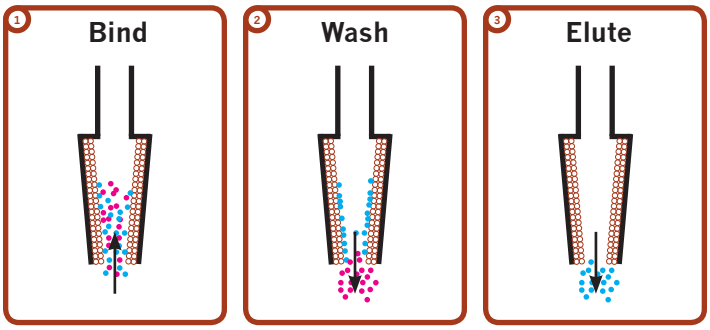
- Simple, fast sample prep with minimal loss
- Enrichment media optimized to characteristics of target small molecule and sample
- Media directly embedded on inner cartridge wall (no matrix) for reduced contamination, no back pressure
- Different sizes to accommodate samples of varying volumes/concentrations (e.g., as small as 0.1 µL)

Product description

Small Molecule Enrichment NuTip is based on Glygen's flagship NuTip micro-SPE technology, enabling separation of low-concentration/volume samples by maximizing surface area in contact with the sample.

Enrichment media is embedded directly in the inner surface of the tip: there are no polymers, glues or scaffolding. This proprietary design prevents contamination or permeability problems common in competitor tips.

How it works



Unpurified sample drawn into NuTip™; target molecule binds

Impurities expelled; target molecules remain bound

Solvent releases bound target molecules; purified sample collected

Media selection

Small Molecule Enrichment NuTips are available with a wide selection of chromatographic media:

Media	Use for
C18	Hydrophobic (Highest)
C8	Hydrophobic (High)
C4	Hydrophobic
Carbon (Graphite)	Both hydrophobic and hydrophilic
HILIC	Hydrophilic

Specifications

Sold in packs of 96 tips.

	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
NT1	1 - 10	0.5 - 10	1 µg	30 µg
NT2	10 - 200	2 - 25	2.5 µg	75 µg
NT3	10 - 200	5 - 50	15 µg	400 µg

Ordering information

Part no.	Price ($)	Specs	
NT1C18	156	Size: NuTip (1-10 µL)	Media: C18
NT1C08	156	Size: NuTip (1-10 µL)	Media: C8
NT1C04	156	Size: NuTip (1-10 µL)	Media: C4
NT1CAR	193	Size: NuTip (1-10 µL)	Media: Carbon (Graphite)
NT1HIL	156	Size: NuTip (1-10 µL)	Media: HILIC
NT2C18	181	Size: NuTip (10-200 µL)	Media: C18
NT2C08	181	Size: NuTip (10-200 µL)	Media: C8
NT2C04	181	Size: NuTip (10-200 µL)	Media: C4
NT2CAR	231	Size: NuTip (10-200 µL)	Media: Carbon (Graphite)
NT2HIL	181	Size: NuTip (10-200 µL)	Media: HILIC
NT3C18	236	Size: NuTip (10-200 µL) LARGE	Media: C18
NT3C08	236	Size: NuTip (10-200 µL) LARGE	Media: C8
NT3C04	236	Size: NuTip (10-200 µL) LARGE	Media: C4
NT3CAR	281	Size: NuTip (10-200 µL) LARGE	Media: Carbon (Graphite)
NT3HIL	281	Size: NuTip (10-200 µL) LARGE	Media: HILIC

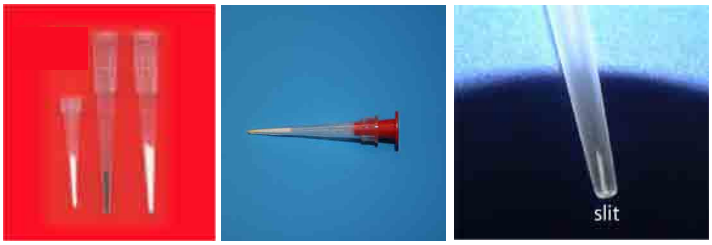
You may also be interested in:

- Small Molecule Enrichment TopTip (see p. 34)
- CrashTip and CrashPlate (see p. 31)
- CapTip (see p. 31)
- Phosphopeptide Enrichment NuTip (see p. 21)
- Glycoprotein/Glycopeptide Enrichment NuTip (p. 25)
- Trap Column (see p. 40)

Small Molecule Enrichment TopTip™

Micro-spin column (no filter) for low concentration and low volume small molecule samples

C18 • C8 • C4 • Carbon • HILIC • Gel Filtration



- Significantly reduce time and expense of SPE (e.g., can top-load samples and centrifuge)
- Dispersive media with no filter, glue, or polymer: improves binding, sample recovery, and reproducibility
- Accommodates wide spectrum of volumes and allows precise control over binding and elution rates
- Ideal for isolating low-abundance small molecules

Product description

Small Molecule Enrichment TopTip is based on Glygen's proprietary micro-spin column technology, enabling high-fidelity separation of low-concentration/volume samples.

The fine slit at the bottom of the TopTip (slit width: 1-2 µm) permits liquid to pass through, but retains chromatographic material in the tip. This unique design eliminates the need for a filter – reducing dead volume, loss of sample and contamination risk.

Elution pressure can be generated using any centrifuge (adaptor included), or manually with a syringe.

Media selection

Small Molecule Enrichment TopTips are available with a wide selection of chromatographic media:

Media	Use for
C18	Hydrophobic (Highest)
C8	Hydrophobic (High)
C4	Hydrophobic
Carbon (Graphite)	Both hydrophobic and hydrophilic
HILIC	Hydrophilic
G-10, G-25, G-50, G-100, P-2, P-4, P-6,	Size-based gel filtration

Specifications

Sold in packs of 96, except for TT3, which are sold in packs of 20.

	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
TT1	1 - 10	1 - 10	400 µg	4 mg
TT2	10 - 200	2 - 25	1000 µg	10 mg
TT3	100 - 1000	20 - 1000	5000 µg	50 mg

* No sample volume limit when using included syringe

Selected references

- Siegel Marshall M: "GPC Spin Column HPLC–ESI-MS Methods for Screening Drugs Noncovalently Bound to Proteins," Ligand-Macromolecular Interactions in Drug Discovery: Methods and Protocols, 2009.

Ordering information

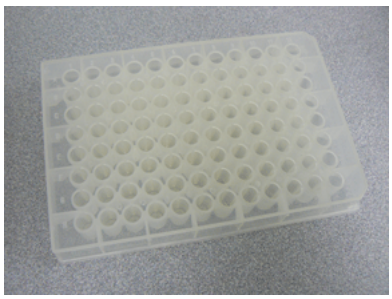
Part no.	Price ($)	Specs	
TT1C18	181	Size: TopTip (1-10 µL)	Media: C18
TT1C08	181	Size: TopTip (1-10 µL)	Media: C8
TT1C04	181	Size: TopTip (1-10 µL)	Media: C4
TT1CAR	243	Size: TopTip (1-10 µL)	Media: Carbon (Graphite)
TT1HIL	206	Size: TopTip (1-10 µL)	Media: HILIC
TT1G10	118	Size: TopTip (1-10 µL)	Media: G-10
TT1G25	118	Size: TopTip (1-10 µL)	Media: G-25
TT1G50	118	Size: TopTip (1-10 µL)	Media: G-50
TT1G100	118	Size: TopTip (1-10 µL)	Media: G-100
TT1P2	118	Size: TopTip (1-10 µL)	Media: P-2
TT1P4	118	Size: TopTip (1-10 µL)	Media: P-4
TT1P6	118	Size: TopTip (1-10 µL)	Media: P-6
TT2C18	218	Size: TopTip (10-200 µL)	Media: C18
TT2C08	218	Size: TopTip (10-200 µL)	Media: C8
TT2C04	218	Size: TopTip (10-200 µL)	Media: C4
TT2CAR	331	Size: TopTip (10-200 µL)	Media: Carbon (Graphite)
TT2HIL	281	Size: TopTip (10-200 µL)	Media: HILIC
TT2G10	118	Size: TopTip (10-200 µL)	Media: G-10
TT2G25	118	Size: TopTip (10-200 µL)	Media: G-25
TT2G50	118	Size: TopTip (10-200 µL)	Media: G-50
TT2G100	118	Size: TopTip (10-200 µL)	Media: G-100
TT2P2	118	Size: TopTip (10-200 µL)	Media: P-2
TT2P4	118	Size: TopTip (10-200 µL)	Media: P-4
TT2P6	118	Size: TopTip (10-200 µL)	Media: P-6
TT3C18	118	Size: TopTip (100-1000 µL)	Media: C18
TT3C08	118	Size: TopTip (100-1000 µL)	Media: C8
TT3C04	118	Size: TopTip (100-1000 µL)	Media: C4
TT3CAR	206	Size: TopTip (100-1000 µL)	Media: Carbon (Graphite)
TT3HIL	156	Size: TopTip (100-1000 µL)	Media: HILIC
TT3G10	118	Size: TopTip (100-1000 µL)	Media: G-10
TT3G25	118	Size: TopTip (100-1000 µL)	Media: G-25
TT3G50	118	Size: TopTip (100-1000 µL)	Media: G-50
TT3G100	118	Size: TopTip (100-1000 µL)	Media: G-100
TT3P2	118	Size: TopTip (100-1000 µL)	Media: P-2
TT3P4	118	Size: TopTip (100-1000 µL)	Media: P-4
TT3P6	118	Size: TopTip (100-1000 µL)	Media: P-6

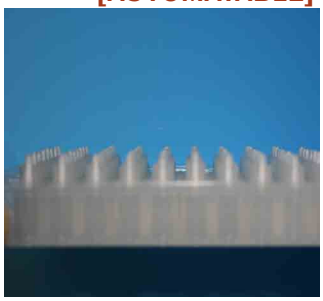
Small Molecule Enrichment Lab-in-a-Plate™ Flow-Thru Plate

96-well plate for vacuum/centrifuge flow-through chromatographic separation with enrichment media

C18 • C8 • C4 • Carbon

[AUTOMATABLE]





- High binding capacity coupled with one of the smallest chromatographic bed volume on the market – ideal for analysis of small sample concentrations
- Ideal for high-throughput screening applications

Product description

Small Molecule Enrichment Flow-Thru Plates are the ideal equipment for vacuum/centrifuge powered SPE of small volumes of sample using various types of media (for applications like high throughput screening, drug metabolite analysis, etc). The Flow-Thru Plate's unique design allows sample to flow from the top of the well, through the chromatographic bed, and out the bottom of each well.

Media selection

Small Molecule Enrichment Flow-Thru Plate is available with a wide selection of media:

Media	Use for
C18	Hydrophobic (Highest)
C8	Hydrophobic (High)
C4	Hydrophobic
Carbon (Graphite)	Both hydrophobic and hydrophilic

Specifications

Sold in packs of one 96-well plate.

	Size	Media bed volume (µL)	Binding capacity
FNS	96-well	40	2000 µg
MFNS	96-well	5 - 7	400 µg
iP	96-well	1	1 µg

Ordering information

Part no.	Price ($)	Specs	
FNSC18	175	Media bed vol: 40 µL	Media: C18
FNSC08	175	Media bed vol: 40 µL	Media: C8
FNSC04	175	Media bed vol: 40 µL	Media: C4
FNSCAR	225	Media bed vol: 40 µL	Media: Carbon (Graphite)
MFNSC18	210	Media bed vol: 7 µL	Media: C18
MFNSC08	210	Media bed vol: 7 µL	Media: C8
MFNSC04	210	Media bed vol: 7 µL	Media: C4
MFNSCAR	210	Media bed vol: 7 µL	Media: Carbon (Graphite)
iPC18	220	Media bed vol: 1 µL	Media: C18
iPC08	220	Media bed vol: 1 µL	Media: C8
iPC04	220	Media bed vol: 1 µL	Media: C4
iPCAR	220	Media bed vol: 1 µL	Media: Carbon (Graphite)

GlyVac™ Vacuum Manifold

Optimized vacuum for Lab-in-a-Plate Flow-Thru Plate sample purification

- High-clarity polycarbonate components allow various filtration processes to be monitored visually
- Accommodates a wide variety of different columns and SBS-format, 96- and 384-well plates
- Easy to maintain, resistant to breakage/degradation

Specifications

Manifold base is injection molded from ABS plastic; top and middle support molded from polycarbonate. 96-well plate support constructed from stainless steel.

Ordering information

Part no.	Price ($)	Specs
VAC001	455	Configuration: Vacuum manifold only
VAC002	625	Configuration: Vacuum manifold with concentration adaptor

Detergent Removal NuTip™

Micro-SPE cartridges for easy removal of detergents

SDS Removal media • HILIC

[AUTOMATABLE]

- Simple, fast detergent removal with minimal sample loss
- Media directly embedded on inner cartridge wall (no matrix) for reduced contamination, no back pressure
- Different sizes to accommodate samples of varying volumes/concentrations (e.g., as small as 0.1 µL)

Product description

Detergent Removal NuTip enables easy separation of detergent from samples in a convenient tip format. The detergent removal media is embedded directly in the inner surface of the tip: there are no polymers, glues or scaffolding. This prevents contamination or permeability problems common in competitor tips.

Media selection

Media	Use for
SDS Removal media	Selective for SDS
HILIC	Effective on a broad spectrum of detergents

Specifications

Sold in packs of 96 tips.

	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
NT1	1 - 10	0.5 - 10	1 µg	30 µg
NT2	10 - 200	2 - 25	2.5 µg	75 µg
NT3	10 - 200	5 - 50	15 µg	400 µg

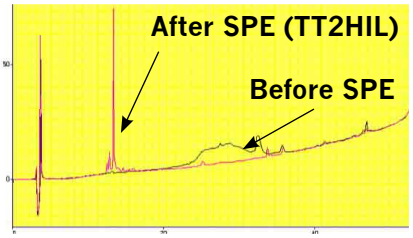
Ordering information

Part no.	Price ($)	Specs	
NT1SDS	156	Size: NuTip (1-10 µL)	Media: SDS-Removal
NT1HIL	156	Size: NuTip (1-10 µL)	Media: HILIC
NT2SDS	181	Size: NuTip (10-200 µL)	Media: SDS-Removal
NT2HIL	181	Size: NuTip (10-200 µL)	Media: HILIC
NT3SDS	281	Size: NuTip (10-200 µL) LARGE	Media: SDS-Removal
NT3HIL	281	Size: NuTip (10-200 µL) LARGE	Media: HILIC

Detergent Removal TopTip™

Micro-spin column (no filter) for detergent removal

SDS Removal media • HILIC



Data courtesy of Britt-Marie Olsson (Stockholm Univ.)

- Significantly reduce time and expense of detergent removal (e.g., can top-load samples and centrifuge)
- Dispersive media with no filter, glue, or polymer: improves binding, sample recovery, and reproducibility
- Micro-spin column allows precise control over rates of binding and elution

Product description

Detergent Removal TopTip enables easy separation of detergent in a convenient micro-spin column. The fine 1-2 µm slit at the bottom of the TopTip permits liquid to pass through (with pressure via centrifuge or syringe), but retains media in the tip. This eliminates need for a filter – reducing dead volume, loss of sample and contamination risk.

Media selection

Media	Use for
SDS Removal media	Selective for SDS
HILIC	Effective on a broad spectrum of detergents

Specifications

Sold in packs of 96 tips.

	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
TT1	1 - 10	1 - 10	400 µg	4 mg
TT2	10 - 200	2 - 25	1000 µg	10 mg
TT3	100 - 1000	20 - 1000	5000 µg	50 mg

* No sample volume limit when using included syringe

Ordering information

Part no.	Price ($)	Specs	
TT1SDS	206	Size: TopTip (1-10 µL)	Media: SDS-Removal
TT1HIL	206	Size: TopTip (1-10 µL)	Media: HILIC
TT2SDS	281	Size: TopTip (10-200 µL)	Media: SDS-Removal
TT2HIL	281	Size: TopTip (10-200 µL)	Media: HILIC
TT3SDS	156	Size: TopTip (100-1000 µL)	Media: SDS-Removal
TT3HIL	156	Size: TopTip (100-1000 µL)	Media: HILIC

iTip™

Custom-packed SPE tips for automated sample prep on liquid handling platforms

C18 • C8 • C4 • Carbon • HILIC • TiO_2 • ZrO_2 • WAX • SAX • WCX • SCX • Protein A • Protein G • DNAPure media • SDS Removal media • Other custom media

- Custom-pack tips of any volume, size, and shape (including conductive tips) with proven reproducibility
- Extensive variety of chromatographic media available for isolation/enrichment of any molecule
- 96-well plate formats also available

Product description

Glygen is proud to offer custom tips/plates for sample prep using automated liquid handling systems. Fully automated sample prep is a significant driver of labs' shift towards automation, enabling scientists to conduct faster, better, and more reproducible experiments. Glygen works closely with liquid handler manufacturers to custom-pack manufacturers' original tips/plates (including conductive tips) with a variety of high-value chromatographic media.

Glygen is the world-leader in media packing; Glygen's proprietary Direct Embedding Process (DEP) enables packing of tips of any volume, size, and shape with proven reproducibility.

Media selection

Glygen custom-packs tips for a wide range of applications, given the broad-spectrum of chromatographic media available.

Application	Media
Peptide desalting	C18, C8, C4, Carbon (Graphite), HILIC
Peptide purification	C18, C8, C4, Carbon (Graphite), WAX, SAX, WCX, SCX
Phosphopeptide purification	TiO_2, ZrO_2
Antibody purification	Protein A, Protein G
DNA purification	DNAPure media
Detergent removal	SDS Removal media, HILIC
Other	CN, NH_2, Cellulose, PO ROS R1, POROS R2, Hydroxyethyl A, Ni, Fe, Ga, Ca, Borate, Blue/Red Dye, Trypsin, Sialidase, G-10/25/50/100, P-2/4/6

Specifications

Glygen custom-packs original manufacturers' tips with its proprietary chromatography media embedding process; bed volume can vary according to customer preference.

Glygen has produced iTips for multiple platforms, including

- Agilent's Bravo system (VeloTip™)
- PerkinElmer's MultiProbe

Selected references

- Keidel, Eva-Maria, et al. Automated sample preparation and spotting on MALDI target plates using the Agilent Bravo Automated Liquid Handling Platform. Agilent Technologies Application Note, July 27, 2010.

Ordering information

Custom product; contact Glygen's sales team or visit www.glysci.com to learn more about ordering custom automated sample preparation solutions.

You may also be interested in:

- GlyVac Vacuum Manifold (see p. 14 or 24)
- Protein/Peptide Desalting Coated or Flow-Thru Plate (see p. 13, 14)
- Phosphopeptide Enrichment Coated or Flow-Thru Plate (see p. 23, 24)
- Antibody Enrichment Flow-Thru Plate (see p. 28)
- DNA Purification Flow-Thru Plate (see p. 30)
- Phospholipid Removal Coated Flow-Thru Plate (see p. 32, 33)

Phospho-molecule HPLC Column

Premier HPLC columns for phosphoproteomics

TiO_2 • ZrO_2

- Offers sharp separations
- Optimal selectivity, excellent reproducibility
- Ideal for phospho-molecule separation
- Longer life for increased experiments

Product description

Glygen HPLC columns are ideal for proteomic separations, or for scaling up to purify compounds. Glygen developed these columns leveraging its significant expertise in phospho-molecule purification.

Media selection

Phospho-molecule HPLC column contains either TiO_2 or ZrO_2 media

Specifications

HPLC Columns are 10 cm in length, and are available with media particle sizes of 3 or 5 µm with 300Å pore size, with a variety of column diameters.

Sold in packs of 1 column.

	Diameter
H_004	4.6 mm
H_002	2.1 mm
H_101	1.0 mm
H_501	0.5 mm
H_301	0.3 mm

Ordering information

Part no.	Price ($)	Specs		
HTIO1004	525	Media: TiO_2	Size: 10 cm x 4.6 mm id	Particle: 5 µm, 300A
HTIO3004	525	Media: TiO_2	Size: 10 cm x 4.6 mm id	Particle: 3 µm, 300A
HTIO1002	525	Media: TiO_2	Size: 10 cm x 2.1 mm id	Particle: 5 µm, 300A
HTIO3002	525	Media: TiO_2	Size: 10 cm x 2.1 mm id	Particle: 3 µm, 300A
HTIO1101	755	Media: TiO_2	Size: 10 cm x 1 mm id	Particle: 5 µm, 300A
HTIO3101	755	Media: TiO_2	Size: 10 cm x 1 mm id	Particle: 3 µm, 300A
HTIO1501	755	Media: TiO_2	Size: 10 cm x 0.5 mm id	Particle: 5 µm, 300A
HTIO3501	755	Media: TiO_2	Size: 10 cm x 0.5 mm id	Particle: 3 µm, 300A
HTIO1301	755	Media: TiO_2	Size: 10 cm x 0.3 mm id	Particle: 5 µm, 300A
HTIO3301	755	Media: TiO_2	Size: 10 cm x 0.3 mm id	Particle: 3 µm, 300A
HZRO1004	525	Media: ZrO_2	Size: 10 cm x 4.6 mm id	Particle: 5 µm, 300A
HZRO3004	525	Media: ZrO_2	Size: 10 cm x 4.6 mm id	Particle: 3 µm, 300A
HZRO1002	525	Media: ZrO_2	Size: 10 cm x 2.1 mm id	Particle: 5 µm, 300A
HZRO3002	525	Media: ZrO_2	Size: 10 cm x 2.1 mm id	Particle: 3 µm, 300A
HZRO1101	755	Media: ZrO_2	Size: 10 cm x 1 mm id	Particle: 5 µm, 300A
HZRO3101	755	Media: ZrO_2	Size: 10 cm x 1 mm id	Particle: 3 µm, 300A
HZRO1501	755	Media: ZrO_2	Size: 10 cm x 0.5 mm id	Particle: 5 µm, 300A
HZRO3501	755	Media: ZrO_2	Size: 10 cm x 0.5 mm id	Particle: 3 µm, 300A
HZRO1301	755	Media: ZrO_2	Size: 10 cm x 0.3 mm id	Particle: 5 µm, 300A
HZRO3301	755	Media: ZrO_2	Size: 10 cm x 0.3 mm id	Particle: 3 µm, 300A

Phospho-molecule HPLC Media

Bulk media for packing specialty HPLC columns

TiO_2 • ZrO_2

- Narrow particle size distribution for sharp separations and excellent reproducibility
- Offers higher resolution and fast analysis

Product description

Ideal media to pack highly-effective HPLC columns for phospho-molecule research.

Media selection

TiO_2 or ZrO_2 media

Specifications

Sold in 100 mg quantities; available in 3 or 5 micron particles with pore size of 300 angstroms

Ordering information

Part no.	Price ($)	Specs	
MTIO3000	100	Media: TiO_2	Particle size: 3 µm
MTIO5000	100	Media: TiO_2	Particle size: 5 µm
MZRO3000	100	Media: ZrO_2	Particle size: 3 µm
MZRO5000	100	Media: ZrO_2	Particle size: 5 µm

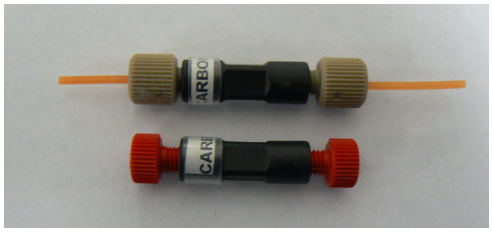
You may also be interested in:

- Phosphopeptide Enrichment NuTip (see p. 21)
- Phosphopeptide Enrichment TopTip (see p. 22)
- Phosphopeptide Standard (see p. 23)
- Phosphopeptide Enrichment Coated Plate (see p. 23)
- Phosphopeptide Enrichment Flow-Thru Plate (see p. 24)
- Trap Column (see p. 40)
- LC-Fiber (see p. 41)
- MALDI-Pen (see p. 42)

Trap Column

Specialty trap columns for online isolation

C18 • C8 • C4 • Carbon • HILIC • TiO_2 • ZrO_2 • WAX • SAX • WCX • SCX • Protein A • SDS Removal media



- Flexible configuration: can be joined in a series
- Fit with any HPLC system using standard fittings
- Different sizes available to address a variety of experimental needs

Product description

Glygen offers unique Trap Columns for online parking of peptides. These Trap Columns can be joined in a series to achieve multiplicative effects of chromatographic separation.

Trap Columns can be attached directly as pre-column, or in the multi-port column switching-valve. The Glygen Trap Column can be attached to any HPLC system by using normal 10-32 fittings.

Media selection

Trap Columns are available for a wide range of applications, given the broad-spectrum of media available.

Application	Media
Peptide desalting	C18, C8, C4, Carbon (Graphite), HILIC
Peptide purification	C18, C8, C4, Carbon (Graphite), WAX, SAX, WCX, SCX
Phosphopeptide purification	TiO_2, ZrO_2
Antibody purification	Protein A
Detergent removal	SDS Removal media, HILIC

Specifications

Trap Columns are available in 10x0.380 mm size, and are sold in packs of 3. Glygen Trap Columns are made of PEEK, with operating pressure up to 5000 psi.

	Type	Media bed volume
TRT1	Female to Male	1 µL
TRF1	Female to Female	75 nL
TRF2	Female to Female	250 nL

Ordering information

Part no.	Price ($)	Specs		
TRT1C18	225	Type: Female to Male	Media volume: 1 µL	Media: C18
TRT1C08	225	Type: Female to Male	Media volume: 1 µL	Media: C8
TRT1C04	225	Type: Female to Male	Media volume: 1 µL	Media: C4
TRT1CAR	255	Type: Female to Male	Media volume: 1 µL	Media: Carbon (Graphite)
TRT1ZRO	255	Type: Female to Male	Media volume: 1 µL	Media: ZrO_2
TRT1TIO	255	Type: Female to Male	Media volume: 1 µL	Media: TiO_2
TRT1HIL	225	Type: Female to Male	Media volume: 1 µL	Media: HILIC
TRT1SSA	225	Type: Female to Male	Media volume: 1 µL	Media: PolySULFOETHYL A (Silica SCX)
TRT1CAT	225	Type: Female to Male	Media volume: 1 µL	Media: PolyCAT A (Silica WCX)
TRT1SAX	225	Type: Female to Male	Media volume: 1 µL	Media: Silica Strong Anion (SAX)
TRT1WAX	225	Type: Female to Male	Media volume: 1 µL	Media: PolyWAX LP (Silica WAX)
TRT1SDS	225	Type: Female to Male	Media volume: 1 µL	Media: SDS-Removal
TRT1PRA	265	Type: Female to Male	Media volume: 1 µL	Media: Protein A
TRF1C18	225	Type: Female to Female	Media volume: 250 nL	Media: C18
TRF1C08	225	Type: Female to Female	Media volume: 250 nL	Media: C8
TRF1C04	225	Type: Female to Female	Media volume: 250 nL	Media: C4
TRF1CAR	255	Type: Female to Female	Media volume: 250 nL	Media: Carbon (Graphite)
TRF1ZRO	255	Type: Female to Female	Media volume: 250 nL	Media: ZrO_2
TRF1TIO	255	Type: Female to Female	Media volume: 250 nL	Media: TiO_2
TRF1HIL	225	Type: Female to Female	Media volume: 250 nL	Media: HILIC
TRF1SSA	225	Type: Female to Female	Media volume: 250 nL	Media: PolySULFOETHYL A (Silica SCX)
TRF1CAT	225	Type: Female to Female	Media volume: 250 nL	Media: PolyCAT A (Silica WCX)
TRF1SAX	225	Type: Female to Female	Media volume: 250 nL	Media: Silica Strong Anion (SAX)
TRF1WAX	225	Type: Female to Female	Media volume: 250 nL	Media: PolyWAX LP (Silica WAX)
TRF1SDS	225	Type: Female to Female	Media volume: 250 nL	Media: SDS-Removal
TRF1PRA	265	Type: Female to Female	Media volume: 250 nL	Media: Protein A
TRF2C18	225	Type: Female to Female	Media volume: 75 nL	Media: C18
TRF2C08	225	Type: Female to Female	Media volume: 75 nL	Media: C8
TRF2C04	225	Type: Female to Female	Media volume: 75 nL	Media: C4
TRF2CAR	255	Type: Female to Female	Media volume: 75 nL	Media: Carbon (Graphite)
TRF2ZRO	255	Type: Female to Female	Media volume: 75 nL	Media: ZrO_2
TRF2TIO	255	Type: Female to Female	Media volume: 75 nL	Media: TiO_2
TRF2HIL	225	Type: Female to Female	Media volume: 75 nL	Media: HILIC
TRF2SSA	225	Type: Female to Female	Media volume: 75 nL	Media: PolySULFOETHYL A (Silica SCX)
TRF2CAT	225	Type: Female to Female	Media volume: 75 nL	Media: PolyCAT A (Silica WCX)
TRF2SAX	225	Type: Female to Female	Media volume: 75 nL	Media: Silica Strong Anion (SAX)
TRF2WAX	225	Type: Female to Female	Media volume: 75 nL	Media: PolyWAX LP (Silica WAX)
TRF2SDS	225	Type: Female to Female	Media volume: 75 nL	Media: SDS-Removal
TRF2PRA	265	Type: Female to Female	Media volume: 75 nL	Media: Protein A

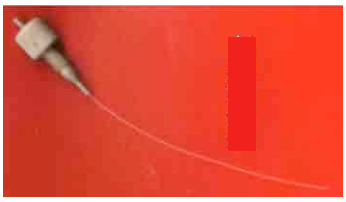
You may also be interested in:

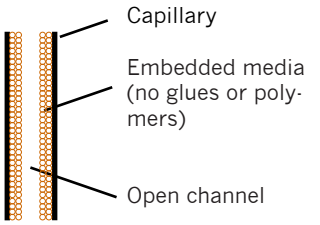
- Phospho-molecule HPLC Column (see p. 40)
- LC-Fiber (see p. 41)

LC-Fiber™

Capillary tube embedded with chromatography media for online enrichment

C18 • C8 • C4 • Carbon • HILIC • TiO_2 • ZrO_2 • WAX • WCX • SCX





- Fast online sample preparation with minimal loss
- Cleaner samples, and no contamination from a filter
- Separation of volumes as low as a few nanoliters

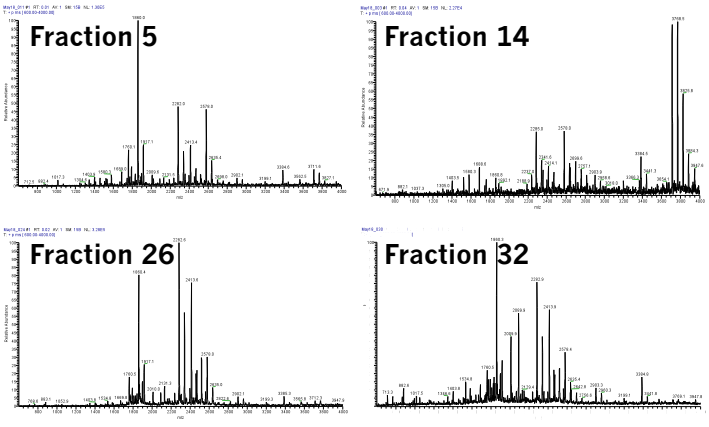
Product description

Glygen's LC-Fiber is a revolutionary patented Wall Coated Open Tubular (WCOT) capillary column for sample preparation. In the LC-Fiber, chromatography material is directly attached to the inner surface of the capillary (as low as 50 micron i.d.), allowing for sample flow with little resistance. The absence of a filter allows the use of chromatographic media in very small sample volumes (i.e., nanoliters).

LC-Fiber can be used as a Capillary for Solid Phase Extraction (CSPE), for capillary HPLC, capillary electro chromatography (CEC), or as an HPLC sample loop for pre column purification.

Data

Purification and partial separation of ovalbumin peptides



after tryptic digestion in LC-Fiber :

Data courtesy of Vladamir Doroshenko (MassTech), Mukta Shukla (Glygen), Ashok Shukla (Glygen)

Media selection

LC-Fibers are available for a wide range of applications, given the broad-spectrum of chromatographic media available.

Application	Media
Peptide desalting	C18, C8, C4, Carbon (Graphite), HILIC
Peptide purification	C18, C8, C4, Carbon (Graphite), WAX, WCX, SCX
Phosphopeptide purification	TiO_2, ZrO_2

Specifications

LC-Fiber consists of a capillary that is made of polypropylene or FEP and your desired chromatography material – nothing else.

Fiber length: 1-50 cm, Internal diameter: 50-500 µm. Glygen LC-Fibers are sold in packs of 1.

Selected references

- MM Shukla, AK Shukla, G Barka, N Manohar, NI Taranenko Use of Chromatographic Hollow Fiber for Purification and Separation of Peptides for AP-MALDI, ABRF 2005; P37-S.
- Mukta M. Shukla , Ashok K. Shukla, Vladimir M. Doroshenko, Nelli I. Taranenko Nanoliter Solid Phase Extraction (SPE) Using Chromatographic Hollow Fibers for Sample Preparation for Mass Spectrometry (ASMS 2004)

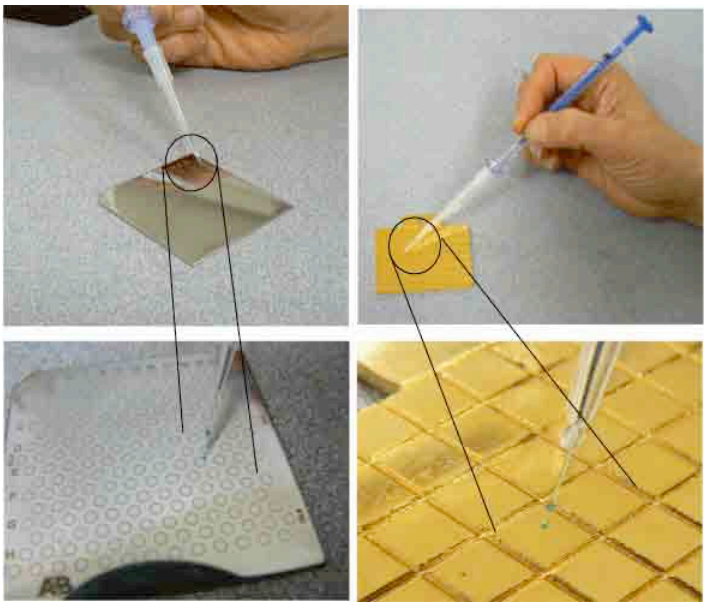
Ordering information

Part no.	Price ($)	Specs
LFC18	169	Media: C18
LFC08	169	Media: C8
LFC04	169	Media: C4
LFCAR	169	Media: Carbon (Graphite)
LFZRO	169	Media: ZrO_2
LFTIO	169	Media: TiO_2
LFHIL	169	Media: HILIC
LFSSA	169	Media: PolySULFOETHYL A (Silica SCX)
LFCAT	169	Media: PolyCAT A (Silica WCX)
LFWAX	169	Media: PolyWAX LP (Silica WAX)

MALDI Pen™

Enables focused and concentrated spotting on MALDI target plates

C18 • C8 • C4 • Carbon • HILIC • TiO_2 • ZrO_2 • WAX • SAX • WCX • SCX • Protein A • SDS Removal media

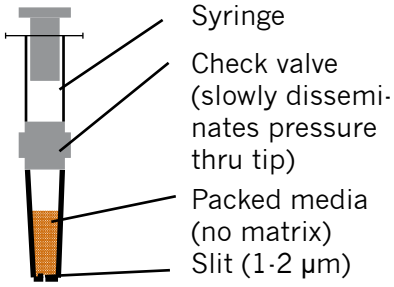


- Enables focused spotting
- Allows continuous-line spotting/elution to find concentrated area of peptides
- Ability to get partial separation of peptides in different fractions

Product description

The MALDI-Pen, a unique technology for sample application, enables a very focused and concentrated spotting on the MALDI target.

The MALDI-Pen has a small slit that enables fluid to flow through but not the chromatographic media. The target molecules (e.g., peptides) can be eluted in small fractions of as low as a few nanoliters to microliters.



Media selection

Application	Media
Peptide desalting	C18, C8, C4, Carbon (Graphite), HILIC
Peptide purification	C18, C8, C4, Carbon (Graphite), WAX, SAX, WCX, SCX
Phosphopeptide purification	TiO_2, ZrO_2
Antibody purification	Protein A
Detergent removal	SDS Removal media, HILIC

Specifications

Chromatographic bed volume of ~1 µL. Sold in packs of 96.

Selected reference

- PL Urban, et al. Lab-on-a-plate: Extending the functionality of MALDI-MS and LDI-MS targets. Mass Spectrometry Reviews (2011)

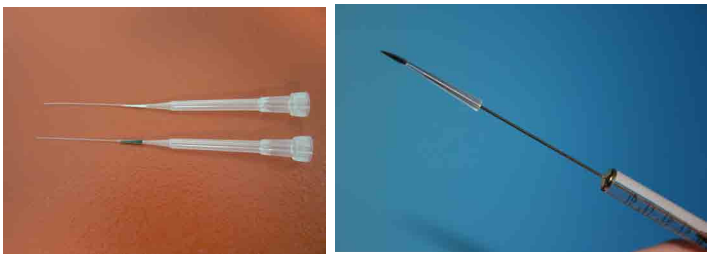
Ordering information

Part No.	Price ($)	Specs	
GT2C18	289	MALDI-Pen (Gel-loader)	Media: C18
GT2C08	289	MALDI-Pen (Gel-loader)	Media: C8
GT2C04	289	MALDI-Pen (Gel-loader)	Media: C4
GT2CAR	361	MALDI-Pen (Gel-loader)	Media: Carbon (Graphite)
GT2ZRO	361	MALDI-Pen (Gel-loader)	Media: ZrO_2
GT2TIO	361	MALDI-Pen (Gel-loader)	Media: TiO_2
GT2HIL	361	MALDI-Pen (Gel-loader)	Media: HILIC
GT2SSA	361	MALDI-Pen (Gel-loader)	Media: PolySULFOETHYL A (Silica SCX)
GT2CAT	361	MALDI-Pen (Gel-loader)	Media: PolyCAT A (Silica WCX)
GT2SAX	361	MALDI-Pen (Gel-loader)	Media: Silica strong Anion (SAX)
GT2WAX	361	MALDI-Pen (Gel-loader)	Media: PolyWAX LP (Silica WAX)
GT2SDS	361	MALDI-Pen (Gel-loader)	Media: SDS-Removal
GT2PRA	361	MALDI-Pen (Gel-loader)	Media: Protein A

Ultra-Micro Volume NuTip™

Micro-SPE cartridge for enrichment of ultra-low volume/concentration samples

C18 • C8 • C4 • Carbon • HILIC • TiO_2 • ZrO_2 • WAX • SAX • WCX • SCX • Protein A • SDS Removal media

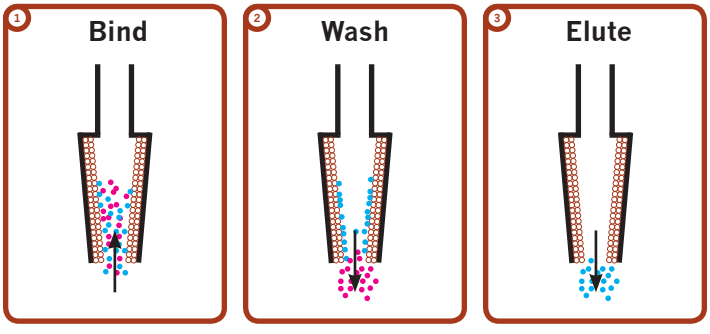


- Excellent sensitivity: For use in the low-femtomole to high-attomole range
- High reproducibility: No tip variation, very reliable methods, and superb ease of use
- High throughput: Load, wash and elute at high flow rates (>300 µL/min) using low back pressure

Product description

Ultra-Micro Volume NuTip enables purification of exceedingly low-concentration/volume samples by maximizing surface area in contact with the sample. The chromatographic media is embedded directly in the inner surface of the tip: there are no polymers, glues or scaffolding. This proprietary design prevents contamination or flow problems common in competitor tips. Ultra-Micro Volume NuTip is available in two formats: the GelLoader Tip is ideal for offline ESI-MS sample preparation, while the Syringe Tip fits HPLC syringes.

How it works



Unpurified sample drawn into NuTip™; target molecule binds

Impurities expelled; target molecules remain bound

Solvent releases bound target molecules; purified sample collected

Media selection

Application	Media
Peptide desalting	C18, C8, C4, Carbon (Graphite), HILIC
Peptide purification	C18, C8, C4, Carbon (Graphite), WAX, SAX, WCX, SCX
Phosphopeptide purification	TiO_2, ZrO_2
Detergent removal	SDS Removal media, HILIC

Specifications

Sold in packs of 96.

	Type	Tip vol. (µL)	Sample vol. (µL)	Binding capacity	Media amount
GT1	Gel-loader	0.5 - 10	0.5 - 10	500 ng	15 µg
ST	Syringe tip	1 - 5	0.1 - 5	500 ng	15 µg

Ordering information

Part no.	Price ($)	Specs	
GT1C18	361	Gel-loader Tip	Media: C18
GT1C08	361	Gel-loader Tip	Media: C8
GT1C04	361	Gel-loader Tip	Media: C4
GT1CAR	361	Gel-loader Tip	Media: Carbon (Graphite)
GT1ZRO	361	Gel-loader Tip	Media: ZrO_2
GT1TIO	361	Gel-loader Tip	Media: TiO_2
GT1HIL	361	Gel-loader Tip	Media: HILIC
GT1SSA	361	Gel-loader Tip	Media: PolySULFOETHYL A (Silica SCX)
GT1CAT	361	Gel-loader Tip	Media: PolyCAT A (Silica WCX)
GT1WAX	361	Gel-loader Tip	Media: PolyWAX LP (Silica WAX)
GT1SDS	361	Gel-loader Tip	Media: SDS-Removal
STC18	156	Syringe Tip	Media: C18
STC08	156	Syringe Tip	Media: C8
STC04	156	Syringe Tip	Media: C4
STCAR	193	Syringe Tip	Media: Carbon (Graphite)
STZRO	193	Syringe Tip	Media: ZrO_2
STTIO	193	Syringe Tip	Media: TiO_2
STHIL	156	Syringe Tip	Media: HILIC
STSSA	156	Syringe Tip	Media: PolySULFOETHYL A (Silica SCX)
STCAT	156	Syringe Tip	Media: PolyCAT A (Silica WCX)
STWAX	156	Syringe Tip	Media: PolyWAX LP (Silica WAX)
STSDS	156	Syringe Tip	Media: SDS-Removal

Disposible Dialyzer

Enables rapid and high-performance dialysis of samples, with no sample loss

- Offers very short dialysis time, given ultra-thin fibers
- No prep needed - arrive pre-assembled with clean membranes
- Fiber Disposible Dialyzer enables dialysis of very small sample volumes (e.g., 0.5-10 µL) with no loss
- Economic and reliable

Specifications

Micro Dialyzer available with 1K, 2K, 5K, 10K and 25K MWCO membranes, sold in packs of 50 and 100.

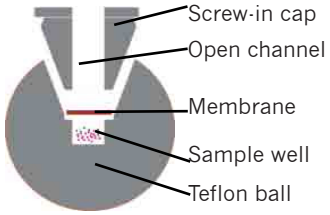
Fiber Dialyzer is one of the only dialyzers on the market for 0.5-10 µL sample volumes; made of MWCO 10K membrane fibers, sold in packs of 25 and 100.

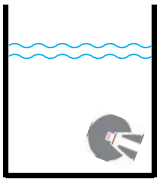
Ordering information

Part no.	Price ($)	Specs			
MFD010.25	125	Type: Fiber	MWCO: 10K	Vol: 0.5 - 10 µL	Quantity: Pack of 25
MFD010.100	400	Type: Fiber	MWCO: 10K	Vol: 0.5 - 10 µL	Quantity: Pack of 100
MIS001.50	150	Type: Micro	MWCO: 1K	Vol: 5 - 100 µL	Quantity: Pack of 50
MIS002.50	150	Type: Micro	MWCO: 2K	Vol: 5 - 100 µL	Quantity: Pack of 50
MIS005.50	150	Type: Micro	MWCO: 5K	Vol: 5 - 100 µL	Quantity: Pack of 50
MIS010.50	150	Type: Micro	MWCO: 10K	Vol: 5 - 100 µL	Quantity: Pack of 50
MIS025.50	150	Type: Micro	MWCO: 25K	Vol: 5 - 100 µL	Quantity: Pack of 50
MIS050.50	150	Type: Micro	MWCO: 50K	Vol: 5 - 100 µL	Quantity: Pack of 50
MIS001.100	250	Type: Micro	MWCO: 1K	Vol: 5 - 100 µL	Quantity: Pack of 100
MIS002.100	250	Type: Micro	MWCO: 2K	Vol: 5 - 100 µL	Quantity: Pack of 100
MIS005.100	250	Type: Micro	MWCO: 5K	Vol: 5 - 100 µL	Quantity: Pack of 100
MIS010.100	250	Type: Micro	MWCO: 10K	Vol: 5 - 100 µL	Quantity: Pack of 100
MIS025.100	250	Type: Micro	MWCO: 25K	Vol: 5 - 100 µL	Quantity: Pack of 100
MIS050.100	250	Type: Micro	MWCO: 50K	Vol: 5 - 100 µL	Quantity: Pack of 100

Ball Dialyzer

Enables rapid dialysis with enhanced membrane-sample contact due to unique spherical design





- Unique spherical design ensures optimal sample contact with membrane, improving efficiency and results
- Low cost, rapid analysis, excellent sample recovery

Product description

Its innovative geometry ensures that the Ball Dialyzer will tilt when immersed in water, such that the sample is always in contact with the membranes for rapid, reliable and cost-effective dialysis.

Specifications

Dialyzers and membranes sold separately.

Ball Dialyzers accommodate 10, 25, 50, 100, and 200 µL volumes, and are sold in packs of 5.

Membranes are available in 100D, 500D, 1K, 2K, 5K, 10K, 25K, 50K, and 100K MWCO, and are sold in packs of 100.

Ordering information

Ball Dialyzer

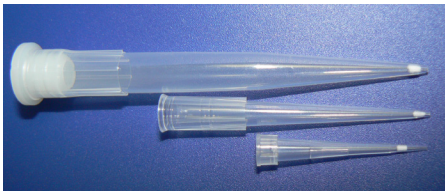
Part No.	Price ($)	Specs	
BD010	385	Volume: 10 µL	Quantity: Pack of 5
BD025	385	Volume: 25 µL	Quantity: Pack of 5
BD050	385	Volume: 50 µL	Quantity: Pack of 5
BD100	385	Volume: 100 µL	Quantity: Pack of 5
BD200	385	Volume: 200 µL	Quantity: Pack of 5

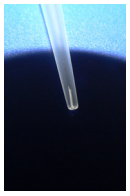
Membrane

Part No.	Price ($)	Specs	
BM0001D	185	MWCO: 100D	Quantity: Pack of 100
BM0005D	185	MWCO: 500D	Quantity: Pack of 100
BM0010D	185	MWCO: 1K	Quantity: Pack of 100
BM0020D	185	MWCO: 2K	Quantity: Pack of 100
BM0050D	185	MWCO: 5K	Quantity: Pack of 100
BM0100D	185	MWCO: 10K	Quantity: Pack of 100
BM0250D	185	MWCO: 25K	Quantity: Pack of 100
BM0500D	185	MWCO: 50K	Quantity: Pack of 100
BM1000D	185	MWCO: 100K	Quantity: Pack of 100

FilterTip™ and SlitTip™

Size-based particle filtration within a tip





- Ideal for filtration of small sample volumes
- Unique design offers minimal sample loss, resulting in improved yields

Product description

FilterTip™ and SlitTip™ enable size-based filtration within a unique tip format, ideal for removal of particles like cell membrane fragments and affinity beads. FilterTip™ contains at its bottom a 0.5 µm inert filter. SlitTip™ is a filterless technology with a 1-2 µm slit to separate particles within samples. The unique design of these technologies enables almost no sample loss.

Specifications

Sold in packs of 96.

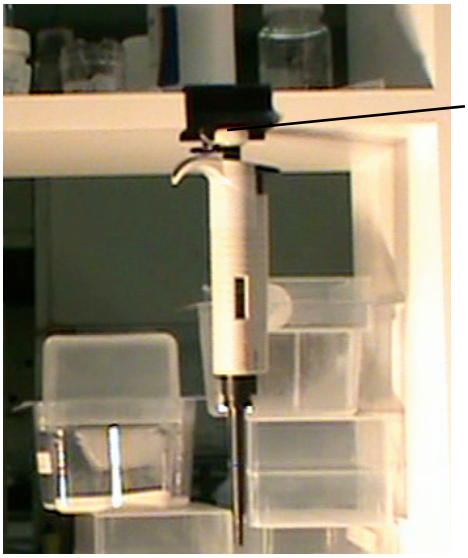
	Type	Tip vol. (µL)	Resolution
FT1	Filter	1 - 10 µL	0.5 µm
FT2	Filter	10 - 200 µL	0.5 µm
FT3	Filter	100 - 1000 µL	0.5 µm
SLT1	No filter	1 - 10 µL	1-2 µm
SLT2	No filter	10 - 200 µL	1-2 µm
SLT3	No filter	100 - 1000 µL	1-2 µm

Ordering information

Part No.	Price ($)	Specs		
FT1.96	175	Type: Filter	Vol: 1 - 10 µL	Resolution: 0.5 µm
FT2.96	175	Type: Filter	Vol: 10 - 200 µL	Resolution: 0.5 µm
FT3.96	175	Type: Filter	Vol: 100 - 1000 µL	Resolution: 0.5 µm
SLT1.96	145	Type: No filter	Vol: 1 - 10 µL	Resolution: 1-2 µm
SLT2.96	175	Type: No filter	Vol: 10 - 200 µL	Resolution: 1-2 µm
SLT3.96	195	Type: No filter	Vol: 100 - 1000 µL	Resolution: 1-2 µm

MagnoPipette™

Magnetic pipette to declutter workspaces and reduce bench-related contamination



- Ultra-strong magnets stick to any metallic surface
- Patented lightweight ergonomic design
- Easy to calibrate and maintain
- Tip ejector allows convenient one hand operation

Product description

The patented MagnoPipette is a micro pipette with an ultra-strong magnet that allows the pipette to stick to any metal surface. Unclutter your experiments and always keep your pipette within reach with MagnoPipette!

Magnets on the top and side of the MagnoPipette can be used to stick the pipette to common lab surfaces (e.g. lab racks, shelves, hoods, or even binder clips).

Specifications

MagnoPipette is available in single-, 8-, and 12-channel, as well as for various volume configurations.

Ordering information

Part no.	Price ($)	Specs	
MP0005	135	Channels: Single Channel	Size: 0.1 - 2.5 µL
MP0010	135	Channels: Single Channel	Size: 0.5 - 10 µL
MP0020	135	Channels: Single Channel	Size: 2 - 20 µL
MP0100	135	Channels: Single Channel	Size: 10 - 100 µL
MP1000	135	Channels: Single Channel	Size: 100 - 1000 µL
M8P0010	265	Channels: 8-Channel	Size: 0.5 - 10 µL
M8P0050	265	Channels: 8-Channel	Size: 5 - 50 µL
M8P0300	265	Channels: 8-Channel	Size: 50 - 300 µL
M2P0010	295	Channels: 12-Channel	Size: 0.5 - 10 µL
M2P0050	295	Channels: 12-Channel	Size: 5 - 50 µL
M2P0300	295	Channels: 12-Channel	Size: 50-300uL

Publications

Application	Glygen product	Media	Year	Publication	Excerpt
Protein/peptide purification and desalting	NuTip	C18	2011	Y Furukawa, K Kaneko, S Watanabe, K Yamanaka. A seeding reaction recapitulates intracellular formation of sarkosyl-insoluble TAR DNA binding protein-43 inclusions. J Biol Chem. 2011 May 27;286(21):18664-72. Epub 2011 Mar 24.	"... After desalted by using NuTip C18 (Glygen Co.), samples were mixed with a matrix, α-Cyano-4-hydroxycinnamic acid, and MALDI-MS and MS/MS spectra were acquired using a 4800plus MALDI-TOF/TOF Analyzer (Applied Biosystems)."
Protein/peptide purification and desalting	NuTip	C18	2011	BS Sixt, C Heinz, P Pichler, E Heinz, J Montanaro. Proteomic analysis reveals a virtually complete set of proteins for translation and energy generation in elementary bodies of the amoeba symbiont Protochlamydia amoebophila. PROTEOMICS Volume 11, Issue 10, pages 1868–1892, May 2011	"Peptide extracts from weak spots were desalted and concentrated before application by using C18 NuTips (Glygen Corp., Columbia, MD, USA) according to the manufacturer's instructions."
Protein/peptide purification and desalting	NuTip	C18	2011	Mark A. Schell, Peng Zhao, and Lance Wells. Outer Membrane Proteome of Burkholderia pseudomallei and Burkholderia mallei From Diverse Growth Conditions. J Proteome Research 2011 10 (5), 2417-2424.	"...peptides bound to activated C18 NuTip (Glygen) by filling and expulsion 20 times."
Protein/peptide purification and desalting	NuTip	C18	2011	L Bonnefond, et al. Structural basis for nonribosomal peptide synthesis by an aminoacyl-tRNA synthetase paralog. PNAS, Published online before print February 15, 2011, doi: 10.1073/pnas.1019480108.	"The product was desalted by passage through a NuTip C18 column (Glygen Corp.)..."
Protein/peptide purification and desalting	NuTip	C18	2011	T Shinano, et al. Proteomic analysis of secreted proteins from aseptically grown rice. Phytochemistry, Volume 72, Issues 4-5, April 2011, p 312-320.	"...peptide solutions were desalted with NuTip C18 pipette tips (Glygen, MD, USA)"
Protein/peptide purification and desalting	NuTip	C18	2010	N Ahsan, Y Nanjo, H Sawada, Y Kohno, S Komatsu. Ozone stress-induced proteomic changes in leaf total soluble and chloroplast proteins of soybean reveal that carbon allocation is involved in adaptation in the early developmental stage. PROTEOMICS, Volume 10, Issue 14, pages 2605–2619, No. 14 July 2010	"The generated peptides were purified using a NuTip C18 (Glygen, Columbia, MD, USA)."
Protein/peptide purification and desalting	NuTip	C18	2010	Junsong Sun, Robert C. Hopkins, Francis E. Jenney, Jr, Patrick M. McTernan, and Michael W. W. Adams Heterologous Expression and Maturation of an NADP-Dependent [NiFe]-Hydrogenase: A Key Enzyme in Biofuel Production PLoS One. 2010; 5(5): e10526.	"The peptides were purified with C18 reversed phase NuTip® cartridges according to the manufacturer's instructions (Glygen Corp., Columbia, MD). "
Protein/peptide purification and desalting	NuTip	C18	2010	Hamid Sobhanian, Roya Razavizadeh, Yohei Nanjo, Ali Akbar Ehsanpour, Ferdous Rastgar Jazii, Nasrin Motamed, Setsuko Komatsu Proteome analysis of soybean leaves, hypocotyls and roots under salt stress Proteome Science 2010, 8:19.	"The generated peptides were purified using NuTip C18 columns (Glygen Corp., Columbia, MD, USA)."
Protein/peptide purification and desalting	NuTip	C18	2010	A Cvetkovic, AL Menon, MP Thorgersen, JW Scott, et al Microbial metalloproteomes are largely uncharacterized Nature 466, 779-782 (5 August 2010)	"The peptides were purified with C18 reversed-phase NuTip cartridges according to the manufacturer's instructions (Glygen). "
Protein/peptide purification and desalting	NuTip	C18	2010	N Ahsan, et al. Differential responses of microsomal proteins and metabolites in two contrasting cadmium (Cd)accumulating soybean cultivars under Cd stress. Amino Acids (November 2010) DOI: 10.1007/s00726-010-0809-7	"The generated peptides were purified using a NuTip C18 (Glygen, Columbia, MD, USA)"
Protein/peptide purification and desalting	NuTip	C18	2010	Fan-Jiang Konga, Atsushi Oyanagia and Setsuko Komatsu Cell wall proteome of wheat roots under flooding stress using gel-based and LC MS/MS-based proteomics approaches Biochimica et Biophysica Acta (BBA) Proteins & Proteomics Volume 1804, Issue 1, January 2010, Pages 124-136	"The peptide solution was desalted with NuTip C18 pipet tips (Glygen, Columbia, MD, USA)."
Protein/peptide purification and desalting	NuTip	C18	2010	Mohammad-Zaman Nouri, Setsuko Komatsu Comparative analysis of soybean plasma membrane proteins under osmotic stress using gel-based and LC MS/MS-based proteomics approaches PROTEOMICS Volume 10, Issue 10, pages 1930–1945, No. 10 May 2010	"The resulting peptides were concentrated and desalted using a NuTip C18 pipet tips (Glygen, Columbia, MD, USA) and analyzed by nanoLC MS/MS for protein identification."
Protein/peptide purification and desalting	NuTip	C18	2010	Jian-Hua XIONG, Bin-Ying FU, Hua-Xue XU, and Yang-Sheng LI, Proteomic analysis of PEG-simulated drought stress responsive proteins of rice leaves using a pyramiding rice line at the seedling stage Botanical Studies (2010) 51: 137-145.	"The peptide solution thus obtained was dried and reconcentrated with 30 ml of 0.1% TFA in 5% ACN/water and then desalted with NuTip C18 pipette tips (Glygen, USA)."
Protein/peptide purification and desalting	NuTip	C18	2010	Afroz, Amber; Rashid Khan, Muhammad; Komatsu, Setsuko Determination of Proteins Induced in Response to Jasmonic Acid and Salicylic Acid in Resistant and Susceptible Cultivars of Tomato Protein and Peptide Letters, Volume 17, Number 7, July 2010 , pp. 836-846(11)	"The resulting peptide solution was dried and reconstituted with 30 µL of 0.1% trifluoroacetic acid in 5% acetonitrile and then desalted with NuTip C18 pipette tips (Glygen, Columbia, MD, USA)."
Protein/peptide purification and desalting	NuTip	C18	2010	Afroz, Amber; Hashiguchi, Akiko; Khan, Muhammad R.; Komatsu, Setsuko Analyses of the Proteomes of the Leaf, Hypocotyl, and Root of Young Soybean Seedlings Protein and Peptide Letters, Volume 17, Number 3, March 2010 , pp. 319-331(13)	"The resulting peptide solution was dried and reconstituted with 30 µL of 0.1% trifluoroacetic acid in 5% acetonitrile and then desalted with NuTip C18 pipette tips (Glygen, Columbia, MD)"
Protein/peptide purification and desalting	NuTip	C18	2010	Yoshiaki Furukawa, Kumi Kaneko, Koji Yamanaka and Nobuyuki Nukina Mutation-dependent polymorphism of Cu,Zn-superoxide dismutase aggregates in the familial form of amyotrophic lateral sclerosis Journal of Biological Chemistry April 19, 2010	"“...desalted using NuTip C18 (Glygen Co.)"
Protein/peptide purification and desalting	NuTip	C18	2009	Roya Razavizadeh, Ali Akbar Ehsanpour, Nagib Ahsan, Setsuko Komatsu, Proteome analysis of tobacco leaves under salt stress, Peptides, Volume 30, Issue 9, September 2009, Pages 1651-1659.	"Purification of the generated peptides was achieved using NuTip C18 (Glygen, Columbia, MD, USA)."
Protein/peptide purification and desalting	NuTip	C18	2009	Setsuko Komatsu, Tetsuya Sugimoto, Tomoki Hoshino, Yohei Nanjo and Kiyoshi Furukawa Identification of flooding stress responsible cascades in root and hypocotyl of soybean using proteome analysis Amino Acids Volume 38, Number 3, 729-738, DOI: 10.1007/s00726-009-0277-0	"The degenerated peptides were purified using NuTip C18 (Glygen, Columbia, MD, USA)."
Protein/peptide purification and desalting	NuTip	C18	2009	S. Komatsu, E. Yamada and K. Furukawa, Cold stress changes the concanavalin A-positive glycosylation pattern of proteins expressed in the basal parts of rice leaf sheaths, Amino Acids, Volume 36, Number 1/January, 2009	"Purification of the generated peptides was achieved using Nutip C18 (Glygen, Columbia, MD, USA"

Application	Glygen product	Media	Year	Publication	Excerpt
Protein/peptide purification and desalting	NuTip	C18	2009	T. Mahmood, A. Jan and S. Komatsu Biologia Plantarum, Volume 53, Number 2/ June, 2009, 285-293, Proteomic analysis of bacterial blight defence signalling pathway using transgenic rice overexpressing thaumatin-like protein.	"The peptide solution, thus obtained was dried and reconcentrated with 0.03 cm3 of 0.1 TFA in 5 % acetonitrile/water and then desalted with NuTip C18 pipette tips (Glygen, Columbia, MD, USA)."
Protein/peptide purification and desalting	NuTip	C18	2009	Akiko Hashiguchi, Katsumi Sakata and Setsuko Komatsu, Proteome Analysis of Early-Stage Soybean Seedlings under Flooding Stress, J. Proteome Res., 2009, 8 (4), pp 2058–206	"The peptide solution obtained was dried and reconcentrated with 30 µL of 0.1% trifluioroacetic acid in 50% acetonitrile and desalted with NuTip C18 pipet tips (Glygen, Columbia, MD)."
Protein/peptide purification and desalting	NuTip	C18	2009	Nisar Ahmad Khan, Ryoji Takahashi, Jun Abe, Setsuko Komatsu, Identification of cleistogamy-associated proteins in flower buds of near-isogenic lines of soybean by differential proteomic analysis, Peptides, Volume 30, Issue 12, December 2009, Pages 2095-2102 (Corrected Proof Note to users, doi:10.1016/j.peptides.2009.08.012.)	"The peptide solution obtained was dried and reconcentrated with 30 µL of 0.1% trifluoroacetic acid in 50% acetonitrile and desalted with NuTip C18 pipette tips (Glygen, Columbia, MD, USA)."
Protein/peptide purification and desalting	NuTip	C18	2009	Setsuko Komatsu, Ryo Yamamoto, Yohei Nanjo, Yoji Mikami, Harunobu Yunokawa and Katsumi Sakata , A Comprehensive Analysis of the Soybean Genes and Proteins Expressed under Flooding Stress using Transcriptome and Proteome Techniques, J. Proteome Res., 2009, 8 (10), pp 4766–4778.	"...peptide solution obtained was dried and reconcentrated with 30 µL of 0.1% trifluioroacetic acid in 50% acetonitrile and desalted with NuTip C18 pipet tips (Glygen, Columbia, MD)"
Protein/peptide purification and desalting	NuTip	C18	2009	Mahmood, Tariq; Kakishima, Makoto; Komatsu, Setsuko, Protein and Peptide Letters, Volume 16, Number 9, September 2009 , pp. 1041-1052(12), Proteome Analysis of Probenazole-Effect in Rice-Bacterial Blight Interactions.	"The peptide solution, thus obtained was dried, reconcentrated and desalted with NuTip C18 pipett tips (Glygen, Columbia, MD, USA)."
Protein/peptide purification and desalting	NuTip	C18	2009	On-Chip Solid-Phase Extraction Preconcentration/Focusing Substrates Coupled to Atmospheric Pressure MatrixAssisted Laser Desorption/Ionization Ion Trap Mass Spectrometry for High Sensitivity Biomolecule Analysis. Arti Navare, Marcela Nouzova, Fernando G. Noriega, Salvador Hernández-Martínez, Christoph Menzel, and Facundo M. Fernández. Rapid Commun Mass Spectrom. 2009 February; 23(4): 477–486.	
Protein/peptide purification and desalting	NuTip	C18	2009	Mahmoud Toorchi, Kiyoshi Yukawa, Mohammad-Zaman Nouri, Setsuko Komatsu, Proteomics approach for identifying osmotic-stress-related proteins in soybean roots, Peptides, Volume 30, Issue 12, December 2009, Pages 2108-2117.	"..desalted with NuTip C18 pipette tips (Glygen, Columbia, MD)"
Protein/peptide purification and desalting	NuTip	C18	2009	Setsuko Komatsu, Takuya Wada, Yann Abal, Mohammad-Zaman Nouri, Yohei Nanjo, Norikazu Nakayama, Satoshi Shimamura, Ryo Yamamoto, Takuji Nakamura and Kiyoshi Furukawa , Analysis of Plasma Membrane Proteome in Soybean and Application to Flooding Stress Response, J. Proteome Res., 2009, 8 (10), pp 4487–4499.	"...desalted with NuTip C18 pipet tips (Glygen, Columbia, MD)"
Protein/peptide purification and desalting	NuTip	C18	2008	Extensive contacts between ADAMTS13 exosites and von Willebrand factor domain A2 contribute to substrate specificity. Weiqiang Gao, Patricia J. Anderson, and J. Evan Sadler. Blood. 2008 September 1; 112(5): 1713–1719.	"Reactions were stopped with EDTA, and then desalted by adsorption on C18 micropipette tips (Glygen, Columbia, MD) and elution with 60% acetonitrile/0.1% formic acid."
Protein/peptide purification and desalting	NuTip	C18	2008	Fang Shi, Ryo Yamamoto, Satoshi Shimamura, Susumu Hiraga, Norikazu Nakayama, Takuji Nakamura, Kiyoshi Yukawa, Mayumi Hachinohe, Hiroshi Matsumoto, Setsuko Komatsu, Cytosolic ascorbate peroxidase 2 (cAPX 2) is involved in the soybean response to flooding, Phytochemistry, Volume 69, Issue 6, April 2008, Pages 1295-1303.	
Protein/peptide purification and desalting	NuTip	C18	2008	Toshihiro Ishizawa, Yusuke Nozaki, Takuya Ueda, Nono Takeuchi, The human mitochondrial translation release factor HMRF1L is methylated in the GGQ motif by the methyltransferase HMPrmC, Biochemical and Biophysical Research Communications, Volume 373, Issue 1, 15 August 2008, Pages 99-103.	"The peptides were further purified using a Nutip C18 column (Glygen Corp.) before MALDI-TOF MS analysis"
Protein/peptide purification and desalting	NuTip	C18	2008	YanWen Feng , Setsuko Komatsu, Toshiko Furukawa, Tomokazu Koshiba and Yoshihisa Kohno Proteome analysis of proteins responsive to ambient and elevated ozone in rice seedlings , Agriculture, Ecosystems & Environment, Volume 125, Issues 1-4, May 2008, Pages 255-265.	
Protein/peptide purification and desalting	NuTip	C18	2007	Xin Zang and Setsuko Komatsu, A proteomics approach for identifying osmotic-stress-related proteins in rice, Phytochemistry, Volume 68, Issue 4, February 2007, Pages 426-437	
Protein/peptide purification and desalting	NuTip	C18	2007	Gerrit J. Schut, Stephanie L. Bridger, and Michael W. W. Adams, Insights into the Metabolism of Elemental Sulfur by the Hyperthermophilic Archaeon Pyrococcus furiosus: Characterization of a Coenzyme ADependent NAD(P)H Sulfur Oxidoreductase, Journal of Bacteriology, June 2007, p. 4431-4441, Vol. 189, No. 12	"Peptides were purified using NuTip C 18 tips (Glygen Corp., Columbia, MD) and spotted (1 µl, containing -cyano-4-hydroxycinnamic acid) directly on a matrix-assisted laser desorption ionization plate."
Protein/peptide purification and desalting	NuTip	C18	2007	Angie R. Purvis, Julia Gross, Luke T. Dang, Ren-Huai Huang, Milan Kapadia, R. Reid Townsend, and J. Evan Sadler: Two Cys residues essential for von Willebrand factor multimer assembly in the Golgi, PNAS October 2, 2007 vol. 104 no. 40 15647-15652.	"Reactions were desalted by adsorption on C18 micropipette tips (Glygen Corp., Columbia, MD) and elution with 60% acetonitrile/0.1% formic acid."
Protein/peptide purification and desalting	NuTip	C18	2006	Weiqiang Gao, Patricia J. Anderson, Elaine M. Majerus, Elodee A. Tuley, and J. Evan Sadler, Exosite interactions contribute to tension-induced cleavage of von Willebrand factor by the antithrombotic ADAMTS13 metalloprotease, PNAS I December 12, 2006 I vol. 103 I no. 50 I 19099-19104.	"Reactions were stopped with EDTA, and then desalted by adsorption on C18 micropipette tips (Glygen, Columbia, MD) and elution with 60% acetonitrile/0.1% formic acid."
Protein/peptide purification and desalting	NuTip	C18	2006	Tariq Mahmood , Asad Jan, Makoto Kakishima, Setsuko Komatsu, Proteomic analysis of bacterial-blight defenseresponsive proteins in rice leaf blades Proteomics Volume 6, Issue 22 (2006), Pages 6053 6065	"The peptide solution thus obtained was dried and reconcentrated with 30 mL of 0.1% TFA in 5% ACN/water and then desalted with NuTip C18 pipette tips (Glygen, Columbia, MD, USA)."

Publications

Application	Glygen product	Media	Year	Publication	Excerpt
Protein/peptide purification and desalting	NuTip	C18	2005	Oleg Chertov, John T Simpson, Arya Biragyn, Thomas P Conrads, Timothy D Veenstra and Robert J Fisher, Enrichment of low-molecular-weight proteins from biofluids for biomarker discoveryExpert Review of Proteomics, January 2005, Vol. 2, No. 1, Pages 139-145.	"TopTip™ pipet tip (Glygen Corp.) is more efficient in separating precipitate and soluble material than centrifugation."
Protein/peptide purification and desalting	NuTip	C4	2011	CK Foo, et al. Radically different amyloid conformations dictate the seeding specificity of a chimeric Sup35 prion. Journal of Molecular Biology, doi:10.1016/j.jmb.2011.02.025 (2011).	"For the MALDI-TOF MS measurement, the dissolved peptides were desalted by NuTip C4 (Glygen)"
Protein/peptide purification and desalting	NuTip	Carbon (Graphite)	2010	T. Nishikaze, et al. Negative-ion MALDI-MS for discrimination of α2,3and α2,6-sialylation on glycopeptides labeled with a pyrene derivative. Journal of Chromatography B. doi:10.1016/jchromb.2010.10.032	"NuTip Carbon was purchased from Glygen Corp. (Columbia, MD). ...Cellulose-purified reaction products were further desalted by NuTip carbon. ..."
Protein/peptide purification and desalting	NuTip	Carbon (Graphite)	2010	RYC Huang, et al. Identification of CaMKII Phosphorylation Sites in Connexin43 by High-Resolution Mass Spectrometry. J. Proteome Res., 2011, 10 (3), pp 1098–1109.	"The eluates were desalted using carbon NuTips (Glygen)..."
Protein/peptide purification and desalting	NuTip	Carbon (Graphite)	2009	KR Wildsmith, B Han, RJ Bateman. Method for the simultaneous quantitation of apolipoprotein E isoforms using tandem mass spectrometry. Analytical Biochemistry, Volume 395, Issue 1, 1 December 2009, Pages 116-118.	"...Samples were desalted using Carbon Nutips following the manufacturer's instructions (Glygen, Columbia, MD)"
Protein/peptide purification and desalting	NuTip	Carbon (Graphite)	2008	Jing-hua Xi, Fang Bai, Julia Gross , R. Reid Townsend, A. Sue Menko, and Usha P. Andley, A KNOCK-IN MOUSE MODEL DEMONSTRATES THAT THE R49C MUTATION IN A-CRYSTALLIN ENHANCES PROTEIN INSOLUBILITY AND CELL DEATH, J. Biol. Chem., Vol. 283, Issue 9, 5801-5814, February 29, 2008.	"...digest was diluted with an equal volume of water and the peptides were extracted with a NuTip porous graphite carbon tip (Glygen Part No. NP2CAR.96)"
Protein/peptide purification and desalting	NuTip	Carbon (Graphite)	2008	Julia Gross, Susan Grass, Alan E. Davis, Petra Gilmore-Erdmann, R. Reid Townsend and Joseph W. St. Geme III, The Haemophilus influenzae HMW1 Adhesin Is a Glycoprotein with an Unusual N-Linked Carbohydrate Modification, First Published on July 11, 2008, doi: 10.1074/jbc.M801819200 September 19, 2008 The Journal of Biological Chemistry, 283, 26010-26015.	"All digestions were acidified to 5% formic acid, and desalted peptides were prepared using a NuTip carbon tip (Glygen) according to the manufacturer's instructions."
Protein/peptide purification and desalting	NuTip	Carbon (Graphite)	2004	Tassilo Muskat, Ph.D. Thesis 2004. Matrixabhangiges Ablationsverhalten von Neutralen und Oberflahencharakteris tika bei der Matrix Assisted Laser Desorption and Ionisation.	
Protein/peptide purification and desalting	NuTip	Carbon (Graphite) +C18	2006	Tadashi Suzuki, Izumi Hara, Miyako Nakano, Masaki Shigeta, Takatoshi Nakagawa, Akihiro Kondo, Yoko Funakoshi and Naoyuki Taniguchi, Man2C1, an a-mannosidase is involved in the trimming of free oligosaccharides in the cytosol. Biochem. J. (2006)	"The mixture was desalted using C18+Carbon NuTip (Hypercarb; Glygen Co., Columbia MD)."
Protein/peptide purification and desalting	NuTip	HILIC	2011	Y Katsumata, Y Kawaguchi, S Baba, S Hattori, et al. Identification of three new autoantibodies associated with systemic lupus erythematosus using two proteomic approaches. Mol Cell Proteomics 2011.	"The resulting peptides were purified using NuTip NT1HIL.96 solid-phase extraction cartridges (Glygen, Columbia, MD) and mixed with α-cyano-4-hydroxycinnamic acid (CHCA) matrix."
Protein/peptide purification and desalting	NuTip	HILIC	2008	Hideaki Shimizu, Asako Tosaki, Kumi Kaneko, Tamao Hisano, Takashi Sakurai, and Nobuyuki Nukina Crystal, Structure of an Active Form of BACE1, an Enzyme Responsible for Amyloid ? Protein Production, Molecular and Cellular Biology, June 2008, p. 3663-3671, Vol. 28, No. 11	"desalted with a hydrophilic Nutip cartridge"
Protein/peptide purification and desalting	NuTip	Anion Exchange	2007	Koji Ikegam, Robb L. Heier, Midori Taruishi, , Hiroshi Takagi, Masahiro Mukai, Shuichi Shimma, Shu Taira, Ken Hatanaka , Nobuhiro Morone, Ikuko Yao, Patrick K. Campbell, Shigeki Yuasa, Carsten Janke, Grant R. MacGregor , and Mitsutoshi Setou, Loss of -tubulin polyglutamylation in ROSA22 mice is associated with abnormal targeting of KIF1A and modulated synaptic function, PNAS I February 27, 2007 I vol. 104 I no. 9 I 3213-3218	"An anion exchange tip (Nutip; Glygen, Columbia, MD) was used to desalt the sample."
Protein/peptide purification and desalting	NuTip		2009	David R.H. Evans, Jonathan K. Romero, Matthew Westoby, Chapter 9 Concentration of Proteins and Removal of Solutes, In: Richard R. Burgess and Murray P. Deutscher, Editor(s), Methods in Enzymology, Academic Press, 2009, Volume 463, Pages 97-120.	"Examples of micropipette-based products are ... NuTips (Glygen, Columbia, MD) in which the interior walls of the tip are coated with the binding."
Protein/peptide purification and desalting	TopTip	C18	2011	Eric S. Underbakke, et al. Protein Footprinting in a Complex Milieu: Identifying the Interaction Surfaces of the Chemotaxis Adaptor Protein CheW. Journal of Molecular Biology Volume 409, Issue 4, 17 June 2011, Pages 483-495.	"Samples were desalted for mass spectrometry using C18-Carbon TopTips (Glygen Corp.)..."
Protein/peptide purification and desalting	TopTip	C18	2006	Hao Wang, Jennifer E. Grant, Christopher M. Doede, Sakthivel Sadayappan, Jeffrey Robbins, Jeffery W. Walker, PKC-[beta]II sensitizes cardiac myofilaments to Ca2+ by phosphorylating troponin I on threonine-144, Journal of Molecular and Cellular Cardiology, Volume 41, Issue 5, November 2006, Pages 823-833.	"The two samples were combined, desalted on TopTip microcolumns (Glygen, Inc.) and analyzed by MALDI-TOF mass spectrometry"
Protein/peptide purification and desalting	TopTip	C18	2003	A.J. Alpert,A.K. Shukla, ABRF 2003 (2/2003; Denver): Poster# P111-W, Precipitation of Large, High-Abundance Proteins from Serum with Organic Solvents.	"TopTip™ disposable SPE pipet tip packed with C18-coated Silica (bed volume 25 µl) [Glygen Corp. item# TT2C18] was conditioned with two washes of 50 µl ACN."
Protein/peptide purification and desalting	TopTip	Carbon (Graphite)	2006	Michael Wacker, Mario F. Feldman, Nico Callewaert, Michael Kowarik, Bradley R. Clarkell, Nicola L. Pohl, Marcela Hernandez, Enrique D. Vines, Miguel A. Valvano, Chris Whitfield, and Markus Aebi,Substrate specificity of bacterial oligosaccharyltransferase suggests a common transfer mechanism for the bacterial and eukaryotic systems. PNAS I May 2, 2006 I vol. 103 I no. 18 I 7088-7093	"Tryptic peptides extracted from in-gel-digested SDS/PAGE bands were desalted over a NuTip 10 Carbon cleanup tip (Glygen, Columbia, MD)."
Protein/peptide purification and desalting	TopTip	Carbon (Graphite)	1999	E.T. Chin and D.I.Papac. The Use of Porous Graphite Carbon Column for Desalting Hydropilic peptides prior to Matrix Assisted Desorption/ Ionization Time-of-Flight Mass Spectrometry Analytical Biochemistry 1999, 273, 179-185.	
Protein/peptide purification and desalting	TopTip	Carbon (Graphite) +C18	2011	Wei Wei, Milady R. Nionuevo, Anish Sharma, Lieza M. Danan-Leon, Julie A. Leary. A Comprehensive Compositional Analysis of Heparin/Heparan Sulfate-Derived Disaccharides from Human Serum. Analytical Chemistry 2011 83 (10), 3703-3708.	"The enzyme digestion was... purified using a C18+carbon-SPE TopTip (Glygen, Columbia, MD). "

Application	Glygen product	Media	Year	Publication	Excerpt
Protein/peptide purification and desalting	TopTip	HILIC	2010	Wim Fremout, Maarten Dhaenens, Steven Saverwyns, Jana Sanyova, Peter Vandenabeele, Dieter Deforce, Luc Moens, Tryptic peptide analysis of protein binders in works of art by liquid chromatography-tandem mass spectrometry, Analytica Chimica Acta, Volume 658, Issue 2, 25 January 2010, Pages 156-162.	
Protein/peptide purification and desalting	TopTip	P-4 (Gel Filtration)	2008	Benfang Ruan, et. al. Binding of rapamycin analogs to calcium channels and FKBP52 contributes to their neuroprotective activities, PNAS January 8, 2008 vol. 105 no. 1 33-38	"TopTip P-4 column was from Glygen (Columbia, MD)"
Protein/peptide purification and desalting	TopTip	Empty	2009	Bekim Bajrami, Yu Shi, Pascal Lapierre, Xudong Yao, Shifting Unoccupied Spectral Space in Mass Spectrum of Peptide Fragment Ions, Journal of the American Society for Mass Spectrometry, Volume 20, Issue 11, November 2009, Pages 2124-2134.	"The resulting peptides were desalted using HLB material (Waters), which was packed in-house in TopTips (10–200 µL; Glygen, Columbia, MD"
Protein/peptide purification and desalting	TopTip	Filter	2010	Thalia Nittis, Lionel Guittat, Richard D. LeDuc, Ben Dao, Julien P. Duxin, Henry Rohrs, R. Reid Townsend and Sheila A. Stewart. Revealing Novel Telomere Proteins Using in Vivo Cross-linking, Tandem Affinity Purification, and Label-free Quantitative LC-FTICR-MS Mol Cell Proteomics 2010 9: 1144-1156.	"The final eluates were forced through Filter-in-a-tips (Glygen Corp., Columbia, MD) to remove any remaining beads."
Protein/peptide enrichment	Centrifuge adaptors		2008	Joshua F. Alfaro, Laura A. Gillies, He G. Sun, Shujia Dai, Tianzhu Zang, Joshua J. Klaene, Byung Ju Kim, Jonathan D. Lowenson, Steven G. Clarke, Barry L. Karge and Zhaohui Sunny Zhou, Chemo-Enzymatic Detection of Protein Isoaspartate Using Protein Isoaspartate Methyltransferase and Hydrazine Trapping, Anal. Chem., 2008, 80 (10), pp 3882–3889.	"Centrifuge adapters purchased from Glygen (Columbia, MD) were used to suspend columns above 1.5 mL centrifuge tubes during centrifugation."
Protein/peptide enrichment	NuTip	C18	2008	Kenneth M. Wannemacher, Alexandra Terskiy, Shengjie Bian, Prem N. Yadav, Hong Li, Richard D. Howells, Purification and mass spectrometric analysis of the [kappa] opioid receptor, Brain Research, Volume 1230, 16 September 2008, Pages 13-26.	
Protein/peptide enrichment	NuTip	Carbon (Graphite)	2010	JH Oh, JM Craft, RR Townsend, JO Deasy, JD Bradley, I El Naqa. A Bioinformatics Approach for Biomarker Identification in Radiation-Induced Lung Inflammation from Limited Proteomics Data. J. Proteome Res., 2011, 10 (3), pp1406–1415, January 12, 2011.	"After 30 min the peptides were extracted with a conditioned Nutip carbon tip (Glygen, Cat No NT3CAR)."
Protein/peptide enrichment	NuTip	Carbon (Graphite)	2009	Proteomic analyses of native brain KV4.2 channel complexes. Céline Marionneau, Richard D. LeDuc, Henry W. Rohrs, Andrew J. Link, R. Reid Townsend, and Jeanne M. Nerbonne. Proteomic analyses of native brain KV4.2 channel complexes. 2009 Jul–Aug; 3(4): 284–294.Published online 2009 July 16.	"Peptides were acidified with formic acid, extracted with NuTip porous graphite carbon wedge tips (Glygen)..."
Protein/peptide enrichment	NuTip	Carbon (Graphite)	2008	R . Craig-Schapiro, A . Davis, R . LeDuc, A . Sha , D . Holtzman, R . Townsend , A . Fagan: Development of a solid phase extraction protocol for extracting peptides from cerebrospinal fluid in conjunction with tandem mass spectrometry to identify novel biomarkers for Alzheimer's disease Alzheimer's and Dementia , Volume 4, Issue 4, Supplement 1, July 2008, Pages T536-T537.	
Protein/peptide enrichment	NuTip	Poly-Hydroxyethyl A	2010	Ventura CL, Malachowa N, Hammer CH, Nardone GA, Robinson MA, et al. 2010 Identification of a Novel Staphylococcus aureus Two-Component Leukotoxin Using Cell Surface Proteomics. PLoS ONE 5(7): e11634. doi:10.1371/journal.pone.0011634	"The dried sample was dissolved in 50 µl of 50 mM formic acid/75% isopropanol and applied to polyhydroxyethyl A 10-µl solid phase extraction tip (Glygen Corporation, Columbia, MD). "
Protein/peptide enrichment	NuTip	POROS RP2	2007	Jurre J. Kamphorst,Rob van der Heijden, Jeroen DeGroot, Floris P. J. G. Lafeber, Theo H. Reijmers,Benno van El,Ubbo R. Tjaden, Jan van der Greef, and Thomas Hankemeier, Profiling of Endogenous Peptides in Human Synovial Fluid by NanoLC?MS: Method Validation and Peptide Identification, J. Proteome Res., 2007, 6 (11), pp 4388–4396.	"SPE was performed with POROS RP-2 C 18 TopTips (Glygen, Columbia, MD)"
Protein/peptide enrichment	NuTip	SCX	2010	A Sanchez et al. Evaluation of Phenylthiocarbamoyl-Derivatized Peptides by Electrospray Ionization Mass Spectrometry: Selective Isolation and Analysis of Modified Multiply Charged Peptides for Liquid Chromatography-Tandem Mass Spectrometry Experiments. Anal. Chem., 2010 82(20), p. 8492-8501.	"...multiply charged peptides (RH peptides) were selectively captured using a SCX minicolumn, NuTip (Glygen Corp)."
Protein/peptide enrichment	TopTip	C18	2007	Gordon B. Mitchell, Muthafar H. Al-Haddawi, Mary Ellen Clark, Jennifer D. Beveridge, and Jeff L. Caswell. Effect of Corticosteroids and Neuropeptides on the Expression of Defensins in Bovine Tracheal Epithelial Cells. Infection and Immunity, March 2007, p. 1325-1334, Vol. 75, No. 3.	
Protein/peptide enrichment	TopTip	POROS RP2	2007	Sandra E. Wiley, Mark L. Paddock, Edward C. Abresch, Larry Gross, Peter van der Geer, Rachel Nechushtai, Anne N. Murphy, Patricia A. Jennings and Jack E. Dixon. The Outer Mitochondrial Membrane Protein mitoNEET Contains a Novel Redox-active 2Fe-2S Cluster, J. Biol. Chem., Vol. 282, Issue 33, 23745-23749, August 17, 2007	"Untagged mitoNEET 33–108 (0.25 µm) was desalted by applying 20 µl of sample to a solid phase extraction pipette tip (TopTip, Glygen Corp.) containing 30 µl of POROS20 reverse phase C18-polymer resin"
Protein/peptide enrichment	TopTip	SCX	2010	Wen-Ping Chen, Xiao-Yuan Yang, Adrian D. Hegeman, William M. Gray, and Jerry D. Cohen Microscale analysis of amino acids using gas chromatography–mass spectrometry after methyl chloroformate derivatization. Journal of Chromatography B, Volume 878, Issue 24, 15 August 2010, Pages 2199-2208	"Alternatively, commercial SCX tips (TT2-TWSCX.96, Glygen Corp, Columbia, MD, USA), based on their modified Top-tip format, proved successful and are more convenient for routine use."
Protein/peptide enrichment	TopTip	SSA	2010	Scott J Walmsley, Corey Broeckling, Ann Hess, Jessica Prenni, and Norman P. Curthoys Proteomic Analysis of Brush Border Membrane Vesicles Isolated from Purified Proximal Convoluted Tubules Am J Physiol Renal Physiol (March 10, 2010). doi:10.1152/ajprenal.00711.2009	"For SCX fractionation, the peptides were bound to a 156 Polysulfoethyl-A microspin TopTip (Glygen) and eluted stepwise with 20 µl volumes of 157 increasing ammonium acetate (20, 40, 60, 80, 120, 160 and 200 mM) in 20% acetonitrile, pH 158"
Protein/peptide enrichment	TopTip	P-4 (Gel Filtration)	2007	Ashok K. Shukla; Mukta Shukla: Reversed Gel Filtration for the Sample Preparation. (POSTER ASMS 2007)	
Protein/peptide enrichment	TopTip	Affinity	2004	Wolfgang H. Fischer, Rebecca Ross, Minkyu Park, Chien Li, Cynthia Donaldson and Joan Vaughan. Identification of Processing Sites in Neuropeptides Employing Microaffinity Columns and MALDI-MS (ASMS 2004). used TopTip with Carboxyl group for the EDC coupling applications	

Publications

Application	Glygen product	Media	Year	Publication	Excerpt
Protein/peptide enrichment	NuTip	Carbon (Graphite)	2009	Serum biomarker profiling by solid-phase extraction with particle-embedded micro tips and matrix-assisted laser desorption/ionization mass spectrometry. Arti Navare, Manshui Zhou, John McDonald, Fernando G. Noriega, M. Cameron Sullards, and Facundo M. Fernandez. Rapid Commun Mass Spectrom. Author manuscript; available in PMC 2009 April 6.	
Protein/peptide enrichment	NuTip	Trypsin	2008	Protein Hydrolysate Compositions Having Improved Sensory Characteristics and Physical Properties , United States Patent Application 20080305212.	
Protein/peptide enrichment	NuTip	Carbon (Graphite)	2008	S Hansen et al. Antibodies against insulin-like growth factor I receptor and uses thereof United States Patent Application 20080226635.	
Protein/peptide enrichment	NuTip	Carbon (Graphite)	2004	Andrew J. Alpert and Ashok K. Shukla (ABRF 2004 Poster), Displacement Chromatography Effects Can Cause Highly Selective Sampling of Peptides During Solid Phase Extraction Cleanup.	
Protein/peptide enrichment	NuTip	IMAC	2003	Andrew J. Alpert and Ashok K. Shukla. Precipitation of Large Proteins from Serum with Organic Solvemts. ASMS 2003	
Protein/peptide enrichment (digestion)	NuTip	TiO_2	2007	Václav eovský , Jan Pohl , Zhihua Yang , Naseer Alam, Athula, B. Attygalle, Identification of three novel peptides isolated from the venom of the neotropical social wasp Polistes major major, Journal of Peptide Science Volume 13, Issue 7 (2007), Pages 445 – 450	"PMM2 dissolved in ammonium bicarbonate buffer (20 µl, 50 mM, pH ~ 7.8) was aspirated into a NuTip Trypsin (Bovine) tip (Glygen Corp., MD, USA) and kept for 5 min."
Protein enzymatic digestion	NuTip	TiO_2	2005	Ashok K. Shukla; Mukta M Shukla; Alexis A. Oetting; Nelli I. Taranenko; Vladimir M. Doroshenko; Application of Non-Covalently Bound Trypsin on Chromatographic Material for Digestion of Proteins, ASMS 2005 TP-09, poster 144	
Phosphopeptide enrichment	NuTip	TiO_2	2011	M Shultz, et al. A crystallographic fragment screen identifies cinnamic acid derivatives as starting points for potent Pim-1 inhibitors. Acta Cryst. (2011). D67, p. 156-166.	"...phosphorylated peptides were enriched using TiO 2 tips (Glygen) and analyzed by MALDI-MS."
Phosphopeptide enrichment	NuTip	TiO_2	2011	C Röwer, et al. Mass Spectrometric Characterization of Protein Structure Details Refines the Proteome Signature for Invasive Ductal Breast Carcinoma. Journal of The American Society for Mass Spectrometry, 1044-0305, p. 1-17.	"...porous TiO_2 immobilized to the inner surface of pipette tips (NuTip; Glygen, Columbia, MD, USA) was [used]."
Phosphopeptide enrichment	NuTip	TiO_2	2010	Vishram P. Kedar, Martyn K. Darby, Jason G. Williams, and Perry J. Blackshear Phosphorylation of Human Tristetraprolin in Response to Its Interaction with the Cbl Interacting Protein CIN85 PLoS One. 2010; 5(3): e9588.	"For phosphopeptide enrichment, TiO_2 tips (Glygen) were employed using essentially the manufacturer's recommended protocol."
Phosphopeptide enrichment	NuTip	TiO_2	2010	Mikkat S, Lorenz P, Scharf C, Yu X, Glocker MO, Ibrahim SM. MS characterization of qualitative protein polymorphisms in the spinal cords of inbred mouse strains. Proteomics. 2010 Mar;10(5):1050-62.	"Porous TiO_2 immobilized to the inner surface of pipette tips (NuTip™, Glygen, Columbia, MD, USA) was used for the selective enrichment of phosphorylated peptides. "
Phosphopeptide enrichment	NuTip	TiO_2	2010	John D. Leszyk Evaluation of the New MALDI Matrix 4-Chloro-α-Cyanocinnamic Acid J Biomol Tech. 2010 July; 21(2): 81–91.	"Phosphopeptides were enriched using ...a 1to 10-µl TiO_2 NuTip..."
Phosphopeptide enrichment	NuTip	TiO_2	2010	Matthew B. Gates, Kenneth B. Tomera and Leesa J. Deterding. Comparison of Metal and Metal Oxide Media for Phosphopeptide Enrichment Prior to Mass Spectrometric Analyses. JASMS June 2010.	"Both MALDI and ESI-MS analyses of the TiO_2 NuTip eluents resulted in the reproducible observation of a greater number of unique sites of phosphorylation with the least amount of nonspecific binding compared with the other MOAC resins. ... Enrichment procedures before MS analyses dramatically improve detection and sequencing of phosphopeptides..."
Phosphopeptide enrichment	NuTip	TiO_2	2010	Uma K. Aryal, Andrew R. S. Ross. Enrichment and analysis of phosphopeptides under different experimental conditions using TiO_2 affinity chromatography and mass spectrometry. Rapid Communications in Mass Spectrometry Volume 24, Issue 2, pages 219–231, 30 January 2010.	"...we have evaluated the performance of TiO_2-MOAC under different loading and elution conditions, using a single make and model of commercially available TiO_2 column (NuTip™ NT1TIO, Glygen Corp., USA) to minimize experimental variability."
Phosphopeptide enrichment	NuTip	TiO_2	2009	R. Luke Wiseman, King-Tung Chin, Cole M. Haynes1 Ariel Stanhill, Chong-FengXu, Assen Roguev, Nevan J. Krogan, Thomas A. Neubert and David Ron: hioredoxin related protein 32 is an arsenite-regulated thiol reductase of the proteasome 19S particle, JBC Papers in Press. Published on April 6, 2009	"For the phospho-SILAC experiments, the extracted peptides were further purified on a TiO 2 tip (1-10-µl NuTip; Glygen)."
Phosphopeptide enrichment	NuTip	TiO_2	2009	MVS Sivaram, TL Wadzinski, SD Redick, T Manna, SJ: Dynein light intermediate chain 1 is required for progress through the spindle assembly chckpoint. The EMBO Journal, 2009 – natue.com.	"Phosphorylated tryptic peptides were enriched for using NuTip TiO_2 micropipette tips (Glygen Corporation) using a modified protocol"
Phosphopeptide enrichment	NuTip	TiO_2	2009	R. Luke Wiseman, King-Tung Chin, Coe M. Haynes, Ariel Stanhill, Chong-Feng Xu, Assen Roguev, Nevan J. Krogan, Thomas A. Neubert, and David Ron: Thioredoxin-related Protein 32 Is an Arsenite-regulated Thiol Reductase of the Proteasome 19 S Particle J. Biol. Chem., Vol. 284, Issue 22, 15233-15245, May 29, 2009	"For the phospho-SILAC experiments, the extracted peptides were further purified on a TiO 2 tip (1-10-µl NuTip; Glygen)."
Phosphopeptide enrichment	NuTip	TiO_2	2009	Ryan Chong, Rachel Swiss, Gabriel Briones, Kathryn L. Stone, Erol E. Gulcicek, Herve Agaisse, Regulatory Mimicry in Listeria monocytogenes Actin-Based Motility, Cell Host & Microbe, Volume 6, Issue 3, 17 September 2009, Pages 268-278.	
Phosphopeptide enrichment	NuTip	TiO_2	2009	Sebastian Leidel, Patrick G. A. Pedrioli, Tamara Bucher, Renée Brost, Michael Costanzo, Alexander Schmidt, Ruedi Aebersold, Charles Boone, Kay Hofmann& Matthias Peter, Ubiquitin-related modifier Urm1 acts as a sulphur carrier in thiolation of eukaryotic transfer RNA, Nature 458, 228-232 (12 March 2009)	

Application	Glygen product	Media	Year	Publication	Excerpt
Phosphopeptide enrichment	NuTip	TiO_2	2007	Eugen Damoc, Christopher S. Fraser, Min Zhou, Hortense Videler, Greg L. Mayeur, John W. B. Hershey, Jennifer A. Doudn, Carol V. Robinson, and Julie A. Leary : Structural Characterization of the Human Eukaryotic Initiation Factor 3 Protein Complex by Mass Spectrometry. Molecular & Cellular Proteomics 6:1135-1146, 2007.	"Microtips filled with TiO 2 were purchased from Glygen and used according to the manufacturer's instructions."
Phosphopeptide enrichment	NuTip	TiO_2	2006	Christopher J. Toher ; Adam W. Perala; Carla J. Marshall-Waggett; Gary A. Valaskovic; Ashok K. Shukla; A.A. Oetting; M.M. Shukla; N. Manohar. Online and Offline Nanoelectrospray Analysis of Phosphopeptides Purified by TiO_2, ZrO_2, and Carbon Wall-Coated Pipette Tips. ASMS 2006 Poster TP 215	
Phosphopeptide enrichment	NuTip	TiO_2	2004	Nelli I. Taranenko, Vladimir M. Doroshenko, Ashok K. Shukla, and Mukta M. Shukla. Applications of AP-MALDI Ion Trap Mass Spectrometry for the Analysis of Phosphopeptides, AMERICAN LABORATORY 36 MAY 2004	
Phosphopeptide enrichment	NuTip	TiO_2+ZrO_2	2010	L Wang et al. Assaying pharmacodynamic endpoints with targeted therapy: Flavopiridol and 17AAG induced dephosphorylation of histone H1.5 in acute myeloid leukemia. Proteomics 10:23(December 2010), p. 4281-4292.	"ZrO_2 and TiO_2 coated NuTips (Glygen Corp, Columbia MD) were used to enrich the phosphopeptides from casein and histone H1 digests."
Phosphopeptide enrichment	NuTip	TiO_2+ZrO_2	2009	Anne M. Distler, Janos Kerner, Kwangwon Lee, Charles L. Hoppel, Chapter 6 Modifications of Mitochondrial Outer Membrane Proteins, In: William S. Allison and Anne N. Murphy, Editor(s), Methods in Enzymology, Academic Press, 2009, Volume 457, Mitochondrial Function, Part B: Mitochondrial Protein Kinases, Protein Phosphatases and Mitochondrial Diseases, Pages 97-115.	"The porous titanium and zirconium oxide microtips are purchased from Glygen (Columbia, MD)."
Phosphopeptide enrichment	NuTip	TiO_2+ZrO_2	2008	Jamie D. Dunn, Elizabeth A. Igrisan, Amanda M. Palumbo, Gavin E. Reidand Merlin L. Bruening: Phosphopeptide Enrichment Using MALDI Plates Modified with High-Capacity Polymer Brushes, Anal. Chem., 2008, 80 (15), pp 5727–5735	"Pipet tips containing 30 µg of TiO 2 or ZrO 2 embedded into the walls of the tip were purchased from Glygen. These systems have a binding capacity of 1–2 µg of peptide."
Phosphopeptide enrichment	NuTip	TiO_2+ZrO_2	2006	H. K. Kweon and K. Hakansson. Selective ZrO_2-based enrichment of phosphorylated peptides for mass spectrometric analysis. Anal Chem. 2006 Mar 15;78(6):1743-9.	"Microtips filled with ZrO_2 and TiO_2 (25 or 50 µg) ...from Glygen (Columbia, MD) [were] used without further modification."
Phosphopeptide enrichment	NuTip	ZrO_2	2008	Liwen Wang; John C. Byrd; Michael A. Freitas and Raj Muthusamy. A Tandem Phosphoprotein/Phosphopeptide Enrichment Strategy for the Characterization of Signaling Proteins in Chronic Lymphocytic Leukemia.Presentation, Fifth Annual Ohio Mass Spectrometry Symposium March 24-25, 2008	"Phosphopeptides were then enriched by use of ZrO_2 coated NuTip (Glygen Corp, Columbia, MD)."
Phosphopeptide enrichment	NuTip	ZrO_2	2007	Liwen Wang, Hua Xu, Chen Ren, Shujun Liu, Guido Marcucci and Michael A. Freitas (Use of ZrO_2 Tips)Enrichment and Characterization of Histone H1 Phosphorylation Isoforms in Chemoprevention of Acute Myeloid Leukemia. 4th Annual Ohio Mass Spectrometry Symposium (March 19-20 2007) 3rd Annual	
Phosphopeptide enrichment	NuTip and TopTip	POROS RP2	2006	Christopher J. Toher ; Adam W. Perala; Carla J. Marshall-Waggett; Gary A. Valaskovic; Ashok K. Shukla; A.A. Oetting; M.M. Shukla; N. Manohar. Online and Offline Nanoelectrospray Analysis of Phosphopeptides Purified by TiO_2, ZrO_2, and Carbon Wall-Coated Pipette Tips. ASMS 2006 Poster TP 215 (for Hypercarb and TiO_2)	
Phosphopeptide enrichment	NuTip and TopTip	POROS RP2	2006	Maja Matis; Urs A. Meyer. Phosphoproteome analysis of primary human hepatocytes: effect of exposure to inducers of cytochromes P450. ASMS-2006 POSTER No. Th 658.	
Phosphopeptide enrichment	NuTip and TopTip	POROS RP2	2006	Maja Matis, Ragna Sack and Urs A. Meyer. Role of protein phosphorylation/dephosphorylations in the regulation of cytochrome P450 genes ASMS 2006 POSTER No. 2666	
Phosphopeptide enrichment	NuTip and TopTip	POROS RP2	2006	Qishan Lin, Jinghua Zhu. Application TiO_2 IMAC for Enrichment Phosphopeptides Prior to Tandem Mass Spectrometry., U Albany Center for Functional Genomics	
Phosphopeptide enrichment	NuTip and TopTip	POROS RP2	1999	Jenny Albanese, Senior Field Applications Specialist ABIProteomics Phospho workshop at Mississippi State University: IMAC in combination with LC-Maldi enables femtomole detection of phosphopeptides. (1999) Profiling the Phosphoproteome of Endometrial Carcinoma.	
Phosphopeptide enrichment	NuTip and TopTip	TiO_2	2010	Jamie D. Dunn, Gavin E. Reid, Merlin L. Bruening Techniques for phosphopeptide enrichment prior to analysis by mass spectrometry Mass Spectrometry Reviews, Volume 29, Issue 1, pages 29–54, January 2010	"...Microtips that contained ZrO_2 (Glygen, Columbia, MD) were utilized for the enrichment of phosphorylated peptides, and the specificity and recovery achieved was compared to that obtained with Glygen microtips containing TiO_2 (with the same binding, rinsing and elution solutions)... Overall, the TiO_2 microtips were more selective for enrichment of multiply phosphorylated peptides, whereas the ZrO_2 tips enriched primarily mono-phosphorylated peptides."
Phosphopeptide enrichment	NuTip and TopTip	TiO_2+ZrO_2	2008	Matthew B. Gates, KennethB.Tomer and LeesaJ.Deterding: MALDI/MS Comparison of Fe-NTA Immobilized Metal Affinity Chromatography and Commercially-Available Metal Oxide Affinity Resins for Phosphopeptide Enrichment, NATO Science for Peace and Security Series A: Chemistry and Biology, Applications of Mass Spectrometry in Life Safety, p. 37-54 (2008).	"Six different resins are compared: Glygen TiO_2 NuTip, ZrO_2 NuTip, mixed ZrO_2 and TiO_2 NuTip,Titansphere TiO_2, PhosTrap magnetic titanium beads, and a Fe-NTA resin. "
Phosphopeptide enrichment	TopTip	C18	2006	Adrian M. Taylor; Leroi DeSouza; K.W. Michael Siu Profiling the Phosphoproteome of Endometrial Carcinoma ASMS 2006. Poster No. TP462.	
Phosphopeptide enrichment	TopTip	Carbon (Graphite)	2002	Loughrey Chen S, Huddleston MJ, Shou W, Deshaies RJ, Annan RS, Carr SA. Mass spectrometry-based methods for phosphorylation site mapping of hyperphosphorylated proteins applied to Net1, a regulator of exit from mitosis in yeast. Mol Cell Proteomics. 2002 Mar;1(3):186-96.	

Publications

Application	Glygen product	Media	Year	Publication	Excerpt
Phosphopeptide enrichment	TopTip	TiO_2	2010	Chitra Rajagopal, Kathryn L. Stone, Richard E. Mains, Betty A. Eipper. Secretion stimulates intramembrane proteolysis of a secretory granule membrane enzyme. Journal of Biological Chemistry, 2010.	"[TiO_2] Top Tips (Glygen Corp.) were prepared by washing 3 times with 40 µl 100% acetonitrile, followed by 0.2 M sodium phosphate, pH 7.0, and 0.5% TFA, 50% acetonitrile."
Phosphopeptide enrichment	TopTip	TiO_2	2010	Parvathi Rudrabhatla, Philip Grant, Howard Jaffe, Michael J. Strong, and Harish C. Pant Quantitative phosphoproteomic analysis of neuronal intermediate filament proteins (NF-M/H) in Alzheimer's disease by iTRAQ FASEB J..2010; 0: fj.10-157859v1	"...phopeptide enrichment by TiO_2 chromatography utilizing a 1to 200-l TiO_2 TopTip (Glygen Corp., Columbia, MD, USA) essentially according to the method of Wu et al. "
Phosphopeptide enrichment	TopTip	TiO_2	2010	Özlü, Nurhan and Monigatti, Flavio and Renard, Bernhard Y. and Field, Christine M. and Steen, Hanno and Mitchison, Timothy J. and Steen, Judith J. Binding Partner Switching on Microtubules and Aurora-B in the Mitosis to Cytokinesis Transition Mol Cell Proteomics 2010 9: 336-350. First Published on September 28, 2009, doi:10.1074/ mcp.M900308-MCP200	"TiO 2 was used to enrich for phosphopeptides. Briefly, lyophilized samples were dissolved in binding buffer (5% TFA, 40% acetonitrile). After loading samples onto the TiO 2 columns (TopTip, Glygen), the column was washed with the binding buffer."
Phosphopeptide enrichment	TopTip	TiO_2	2010	Weitao Jia, Justin F. Shaffer, Samantha P. Harris, Julie A. Leary Identification of Novel Protein Kinase A Phosphorylation Sites in the M-domain of Human and Murine Cardiac Myosin Binding Protein-C Using Mass Spectrometry Analysis Journal of Proteome Research 2010 9 (4), 1843-1853	"The phosphopeptides were also enriched using TopTips filled with TiO 2 (particle size 20–30 µm, Glygen Corp., Columbia, MD) as described in the manufacturer's instruction with minor modifications."
Phosphopeptide enrichment	TopTip	TiO_2	2009	Fang Shen, Nan Li, Padmaja Gade, Dhananjaya V. Kalvakolanu, Timothy Weibley, Brad Doble, James R. Woodgett, Troy D. Wood, and Sarah L. Gaffen, IL-17 Receptor Signaling Inhibits C/EBPβ by Sequential Phosphorylation of the Regulatory 2 Domain, Sci. Signal., 24 February 2009 Vol. 2, Issue 59, p. ra8	"...Vacuum-dried peptides were dissolved in 80%ACN/0.1%TFA and loaded on a Top tip-TiO 2 micropipette tip (Glygen Corp)"
Phosphopeptide enrichment	TopTip	TiO_2	2009	Jesse Rinehart, Yelena D. Maksimova, Jessica E. Tanis, Kathryn L. Stone, Caleb A. Hodson, Junhui Zhang, Mary Risinger, Weijun Pan, Dianqing Wu, Christopher M. Colangelo, Biff Forbush, Clinton H. Joiner, Erol E. Gulcicek, Patrick G. Gallagher, Richard P. Lifton, Sites of Regulated Phosphorylation that Control K-Cl Cotransporter Activity, Cell, Volume 138, Issue 3, 7 August 2009, Pages 525-536.	"Peptides were extracted with 0.5% trifluoroacetic acid, dried, resuspended, and applied to a TiO_2 TopTip micro-spin column (Glygen Corp.)."
Phosphopeptide enrichment	TopTip	TiO_2	2009	Chitra Rajagopal, Kathryn L. Stone, Victor P. Francone, Richard E. Mains and Betty A. Eipper , Secretory Granule to the Nucleus, ROLE OF A MULTIPLY PHOSPHORYLATED INTRINSICALLY UNSTRUCTURED DOMAIN, First Published on July 27, 2009, doi: 10.1074/jbc.M109.035782 September 18, 2009 The Journal of Biological Chemistry, 284, 25723-25734.	"TiO 2 Top Tips (Glygen Corp.) were washed with 40 µl of 100% acetonitrile, followed by 0.2 m sodium phosphate, pH 7.0, and then by 0.5% trifluoroacetic acid, 50% acetonitrile."
Phosphopeptide enrichment	TopTip	TiO_2	2009	Emily S. Boja, Darci Phillips, Stephanie A. French, Robert A. Harris and Robert S. Balaban, Quantitative Mitochondrial Phosphoproteomics Using iTRAQ on an LTQ-Orbitrap with High Energy Collision Dissociation, J. Proteome Res., 2009, 8 (10), pp 4665–4675.	"TiO_2 prepacked toptips were obtained from Glygen (Columbia, MD)."
Phosphopeptide enrichment	TopTip	TiO_2	2009	Minsoo Oh, Hangun Kim, Ilhwan Yang, Ja-Hye Park, Wei-Tao Cong, Moon-Chang Baek, Sonja Bareiss, Hyunkyoung Ki, Qun Lu, Jinhyung No, Inho Kwon, Jung-Kap Choi and Kwonseop Kim, GSK-3 phosphorylates delta-catenin and negatively regulates its stability via ubiquitination/proteosome-mediated proteolysis, First Published on August 25, 2009, doi: 10.1074/jbc.M109.002659.	"After trypsin digestion, phosphopeptides were enriched using phosphopeptide enrichment... TiO 2 (Glygen Corp.) according to the manufacturer's protocol."
Phosphopeptide enrichment	TopTip	TiO_2	2008	Matthias Rainer , Harald Sonderegger , Rania Bakry , Christian W. Huck , Sandra Morandell , Lukas A. Huber , Douglas T. Gjerde , Günther K. Bonn, Analysis of protein phosphorylation by monolithic extraction columns based on poly(divinylbenzene) containing embedded TiO_2 and ZrO_2 nano-powders. Proteomics Volume 8 Issue 21 (2008),Pages4593–4602	
Phosphopeptide enrichment	TopTip	TiO_2	2008	Scott B. Ficarro, Jignesh R. Parikh, Nathaniel C. Blankand Jarrod A. Marto: Niobium(V) Oxide (Nb_2O_5): Application to Phosphoproteomics. Anal. Chem., 2008, 80 (12), pp 4606–4613	"MALDI mass spectra of tryptic α-casein peptides enriched by TiO 2 and a mixed bed of TiO 2 and Nb 2 O 5 , each in TopTip format."
Phosphopeptide enrichment	TopTip	TiO_2	2008	Mika Teranishi, Kentaro Nakamura, Hiroshi Morioka, Kazuo Yamamoto and Jun Hidema: The Native Cyclobutane Pyrimidine Dimer Photolyase of Rice Is Phosphorylated, Plant Physiology 146:1941-1951 (2008).	"recover the phosphorylated peptides from tryptic peptide mixtures of the 56-kD CPD photolyase using a TiO_2 microcolumn (Glygen)"
Phosphopeptide enrichment	TopTip	TiO_2	2008	M Mazanek, G Mitulovi, F Herzog, C Stingl, JRA TiO_2 as a chemo-affinity solid phase in offline phosphopeptide chromatography prior to 11 enriched phosphopeptides by using self-packed TiO 2 tips, 2008.	"enriched phosphopeptides by using self-packed TiO 2 tips, but we decided to use commercially available pre-packed TopTips from Glygen"
Phosphopeptide enrichment	TopTip	TiO_2	2007	Xin-De Zheng, Raymond Teck Ho Lee, Yan-Ming Wang, Qi-Shan Lin and Yue Wang The EMBO Journal advance online publication 2 August 2007, Phosphorylation of Rga2, a Cdc42 GAP, by CDK/Hgc1 is crucial for Candida albicans hyphal growth. doi: 10.1038/sj.emboj.7601814, The EMBO Journal (2007), 1–10	"The phosphopeptides were enriched using TiO_2 TopTip (Glygen Inc., Columbia, NY). The bound peptides were eluted with 0.5% NH3OH."
Phosphopeptide enrichment	TopTip	TiO_2	2007	D. A. Moraga, M. C. Chow, I. Isaac, and S. M. Stevens, P77-M Automated Analysis of Gel-Derived Phosphoproteins Using the Investigator Proteomic System, Jr. J Biomol Tech. 2007 February; 18(1): 26.	"Tryptic digests from each protein spot were processed with the ProMS workstation using TiO_2 microcolumns (Glygen Corp., Columbia, MD) for phosphopeptide enrichment prior to MALDITOF/TOF analysis (ABI 4700 Proteomics Analyzer)."
Phosphopeptide enrichment	TopTip	TiO_2	2007	DJ Jang, M Guo, D Wang. Proteomic and biochemical studies of calcium-and phosphorylation-dependent calmodulin complexes in mammalian cells. J. Proteome Res., 2007, 6 (9), pp 3718–3728	"Aliquots of the tryptic digests were enriched for phosphopeptides using TiO 2 columns (Glygen Inc.) as described 23 and analyzed by LC–MS/MS"
Phosphopeptide enrichment	TopTIp	TiO_2	2006	Michael Mazanek, Goran Mituloviae, Franz Herzog, Christoph Stingl, James RA Hutchins, Jan Michael Peters and Karl Mechtler TiO_2 as a chemo-affinity solid phase in offline phosphopeptide chromatography prior to HPLC-MS/MS analysis	"TiO_2 -filled tips: TopTips, produced by Glygen"

Application	Glygen product	Media	Year	Publication	Excerpt
Phosphopeptide enrichment	TopTip	TiO_2	2006	Christopher J. Toher, Adam W. Perala, Ashok K. Shukla, Gary A. Valaskovic Offline Nano-ESI Phosphopeptide Analysis with Carbon, TiO_2, and ZrO_2, wall-Coated Trap'nTips™, ABRF 2006	
Phosphopeptide enrichment	TopTip	TiO_2+ZrO_2	2010	Lenka Novotna, Tereza Emmerova, Daniel Horak, Zdenka Kucerova and Marie Tich. Iminodiacetic acid-modified magnetic poly(2-hydroxyethyl methacrylate)-based microspheres for phosphopeptide enrichment. J Chromatography A Available online 31 August 2010.	"TopTip TiO 2 and 102 TopTip ZrO 2 were from Glygen (Columbia, VA, USA)."
Phosphopeptide enrichment	Lab-ina-Plate Coated Plate	TiO_2	2008	Brian Roberts, Jan Pohl, Jennifer L. Gooch, A fluorimetric method for determination of calcineurin activity, Cell Calcium, Volume 43, Issue 5, May 2008, Pages 515-519.	"Titanium-oxide (TiO 4)-coated plates were obtained from Glygen (Colombus, MA)"
Phosphopeptide enrichment	Media	TiO_2	2009	Mingquan Guo, A phosphoproteomic strategy compatible with systems biology analysis, Analytical Biochemistry, In Press, Corrected Proof, Available online 11 April 2009.	"TiO 2 particles (50 µm) were purchased from Glygen (Columbia, MD, USA)."
Phosphopeptide enrichment	Media	TiO_2	2009	Zenglan Wang, Gaofeng Dong, Sasha Singh, Hanno Steen, Jiaxu Li, A simple and effective method for detecting phosphopeptides for phosphoproteomic analysis, Journal of Proteomics, Volume 72, Issue 5, Special Section: "From Genome to Proteome: Integration and proteome completion", 21 July 2009, Pages 831-835.	"The peptide solution was then added to 2.6 mg of equilibrated TiO 2 beads (Glygen) in a microspin column..."
Phosphopeptide enrichment	Media	TiO_2	2008	Eric S. Simon, Matthew Young, Antonia Chana, Zhao-Qin Bao and Philip C. Andrews, Improved enrichment strategies for phosphorylated peptides on TiO_2 using methyl esterification and pH gradient elution, Analytical Biochemistry, Volume 377, Issue 2, 15 June 2008, Pages 234-242.	"TiO 2 particles (50 µm) were purchased from Glygen (Columbia, MD)"
Phosphopeptide enrichment		IMAC	2004	V. M. Doroshenko, N. I. Taranenko, A. K. Shukla, M. M. Shukla AP-MALDI Ion Trap Mass Spectrometry Analysis of Selective Phosphopeptides Using Different Immobilized Metal Affinity Chromatography Materials (ASMS 2004)	
Phosphopeptide enrichment		TiO_2+ZrO_2	2010	Michael Mazanek, Elisabeth Roitinger, Otto Hudecz, James R.A. Hutchins, Bjorn Hegemann, Goran Mitulovic, Thomas Taus, Christoph Stingl, Jan-Michael Peters, Karl Mechtler, A new acid mix enhances phosphopeptide enrichment on titaniumand ZrO_2 for mapping of phosphorylation sites on protein complexes, Journal of Chromatography B, Volume 878, Issues 5-6, 15 February 2010, Pages 515-524.	
Phosphopeptide enrichment			2009	Stable Oxygen Isotope Labeling of Pre-existing Phosphoryl Groups on Phospho-molecules for Modification-Specific Mass Spectrometry United States Patent Application 20090142849.	
Phosphopeptide enrichment			2008	Chao Yuan, Quanhu Sheng,Haixu Tang, Yixue Li, Rong Zeng, and R. John Solaro, Quantitative comparison of sarcomeric phosphoproteomes of neonatal and adult rat hearts, Am J Physiol Heart Circ Physiol 295: H647-H656, 2008.	"TiO 2 Nutips (Glygen, Columbia, MD) were washed with binding buffer (10% ACN-2% FA), then with 10 mg/ml dihydroxybenzoic (DHB; Sigma-Aldrich)..."
Phosphopeptide enrichment			2008	Marit Lenman, Carolin Sörensson, and Erik Andreasson Enrichment of Phospho-proteins and Phosphopeptide Derivatization Identify Universal Stress Proteins in Elicitor-Treated Arabidopsis. Molecular Plant-Microbe Interactions, October 2008, Volume 21, Number 10, Pages 1275-1284.	"Prepacked TiO_2 Nutip columns from Glygen..."
Phosphopeptide enrichment			2008	Adam J. Carroll, Joshua L. Heazlewood, Jun Ito, A. Harvey Millar, Analysis of the Arabidopsis cytosolic ribosome proteome provides detailed insights into its components and their post-translational modification, Journal of Biological Chemistry, 2008 ASBMB, ... 283, Issue 9, 5801-5814, February 29, 2008.	"Phosphopeptide Enrichment Using TiO_2—. TiO 2 tips (NuTip) were supplied by Glygen Inc., and phosphopeptide enrichment procedures were essentially those outlined by Larsen et al. (24) with some modifications."
Phosphopeptide enrichment			2008	Scott B. Ficarro, Jignesh R. Parikh, Nathaniel C. Blank and Jarrod A. Marto, Niobium(V) Oxide (Nb2O5): Application to Phosphoproteomics,Anal. Chem., 2008, 80 (12), pp 4606–4613	
Phosphopeptide enrichment			2007	Henrik Molina, David M. Horn, Ning Tang, Suresh Mathivanan, and Akhilesh Pandey: Global proteomic profiling of phosphopeptides using electron transfer dissociation tandem mass spectrometry, PNAS February 13, 2007 vol. 104 no. 7 2199-2204.	"The peptides obtained from the digestion step were dried down, and selected fractions were redissolved in 20 µl of 80% acetonitrile, 66 mg/ml 2,5-dihydrobenzoic acid, and 1% TFA and loaded onto a home-built TiO 2 (Glygen Corp, Columbia MD) microcolumn"
Phosphopeptide enrichment			2007	Andrew J. Alpert; Steven P. Gygi; Ashok K. Shukla, Desalting Phosphopeptides by Solid-Phase Extraction (POSTER ASMS 2007)	
Phosphopeptide enrichment			2006	King JB, Gross J, Lovly CM, Rohrs H, Piwnica-Worms H, Townsend RR. Accurate mass-driven analysis for the characterization of protein phosphorylation. Study of the human Chk2 protein kinase.Anal Chem. 2006 Apr 1; 78(7):2171-81.	
Phosphopeptide enrichment			2006	Julie B. King, Julia Gross, Christine M. Lovly, Henry Rohrs,Helen Piwnica-Worms, and R. Reid Townsend, Accurate Mass-Driven Analysis for the Characterization of Protein Phosphorylation. Study of the Human Chk2 Protein Kinase, Anal. Chem., 2006, 78 (7), pp 2171–2181.	
Phosphopeptide enrichment			2004	V. M. Doroshenko, N. I. Taranenko, A. K. Shukla, M. M. Shukla Phosphoand Glyco-peptides Analysis Using Negative and Positive AP-MALDI Ion Trap Mass Spectrometry. ABRF2004	
Glycoprotein/glyco-peptide enrichment	NuTip	Carbon (Graphite) +C18	2010	Hiroto Hirayama, Junichi Seino, Toshihiko Kitajima, Yoshifumi Jigami and Tadashi Suzuki Free Oligosaccharides to Monitor Glycoprotein Endoplasmic Reticulum-associated Degradation in Saccharomyces cerevisiae The Journal of Biological Chemistry	"For desalting of PA-oligosaccharide-containing fractions, we used C18+ carbon NuTip (Hypercrb, Glygen, Columbia, MD) as described previously""
Glycoprotein/glyco-peptide enrichment	NuTip	Carbon (Graphite) +C18	2003	Ashok K. Shukla, Mukta M. Shukla, Eric D. Stover, and Andreas F. Huhmer. Application of Mixed-Mode SolidPhaseExtraction (MMSPE) for Proteomics Sample Preparation. AMERICAN BIOTECHNOLOGY LABORATORY/OCTOBER 2003	

Publications

Application	Glygen product	Media	Year	Publication	Excerpt
Glycoprotein/glycopeptide enrichment	NuTip	Carbon (Graphite)	2010	Susan Grass, Cheryl F. Lichti, R. Reid Townsend, Julia Gross, and Joseph W. St. Geme, III The Haemophilus influenzae HMW1C Protein Is a Glycosyltransferase That Transfers Hexose Residues to Asparagine Sites in the HMW1 Adhesin PLoS Pathog. 2010 May; 6(5): e1000919.	"Peptides were ... extracted 6 times with 10–200 µl NuTip porous graphite carbon wedge tips (Glygen) according to the manufacturer's directions...""
Glycoprotein/glycopeptide enrichment	NuTip	Carbon (Graphite)	2010	Mizuho INAGAKI, Shuuichi NAKAYA, Daisuke NOHARA, Tomio YABE, Yoshihiro KANAMARU and Tohru SUZUKI, "The Multiplicity of N-Glycan Structures of Bovine Milk 18 kDa Lactophorin (Milk GlyCAM-1)", Biosci. Biotechnol. Biochem., Vol. 74, 447-450 (2010) .	"The PA-derivatized glycans were...purified via Nutip Carbon (Glygen, Columbia, MD) according to the manufacturer's protocol.""
Glycoprotein/glycopeptide enrichment	NuTip	Carbon (Graphite)	2010	John W. Froehlich, Eric D. Dodds, Mariana Barboza, Erica L. McJimpsey, Richard R. Seipert, Jimi Francis, Hyun Joo An, Samara Freeman, J. Bruce German, Carlito B. Lebrilla Glycoprotein Expression in Human Milk during Lactation Journal of Agricultural and Food Chemistry 2010 58 (10), 6440-6448	"Porous graphitized carbon cartridges were obtained from Glygen."
Glycoprotein/glycopeptide enrichment	NuTip	Carbon (Graphite)	2009	Eric D. Dodds, Richard R. Seipert, Brian H. Clowers, J. Bruce Germanand Carlito B. Lebrilla, Analytical Performance of Immobilized Pronase for Glycopeptide Footprinting and Implications for Surpassing Reductionist Glycoproteomics, J. Proteome Res., 2009, 8 (2), pp 502–512	"...the digests were then purified by solid-phase extraction using 10 µL of Glygen NuTips loaded with graphitic carbon (Columbia, MD)."
Glycoprotein/glycopeptide enrichment	NuTip	Carbon (Graphite)	2009	Afucosylated antibodies against CCR5 and their use for the treatment of inflammatory conditions, United States Patent Application 20090226434.	"...the glycan structures released were isolated and desalted using NuTip-Carbon pipette tips (obtained from Glygen)."
Glycoprotein/glycopeptide enrichment	NuTip	Carbon (Graphite)	2008	Tadashi Suzuki, Ichiro Matsuo, Kiichiro Totani, Sho Funayama, Junichi Seino, Naoyuki Taniguchi, Yukishige Ito, Sumihiro Hase, Dual-gradient high-performance liquid chromatography for identification of cytosolic high-mannosetype free glycans, Analytical Biochemistry, Volume 381, Issue 2, 15 October 2008, Pages 224-232.	"Fractions were desalted using C18+Carbon NuTip (Hypercarb, Glygen, Columbia, MD)"
Glycoprotein/glycopeptide enrichment	NuTip	Carbon (Graphite)	2008	Julia Gross, Susan Grass, Alan E. Davis, Petra Gilmore-Erdmann, R. Reid Townsend, Joseph W. St. Geme, THE HAEMOPHILUS INFLUENZAE HMW1 ADHESIN IS A GLYCOPROTEIN WITH AN UNUSUAL N-LINKED CARBOHYDRATE MODIFICATION, JBC Papers in Press. Published on July 11, 2008	"All digestions were acidified to 5% formic acid, and desalted peptides were prepared using a NuTip carbon tip (Glygen) according to the manufacturer's instructions."
Glycoprotein/glycopeptide enrichment	NuTip	Carbon (Graphite)	2008	Christoph Kannicht, Detlef Grunow and Lothar Lucka, Enzymatic Sequence Analysis of N -Glycans by Exoglycosidase Cleavage and Mass Spectrometry detection of Lewis X Structures, Methods in Molecular Biology, Volume 446, Posttranslational Modifications of Proteins, Humana Press, p. 255-266, (2008)	"TopTip carbon spin column, type P-2-Carbon (Glygen Corp., Columbia, USA) for sample purification"
Glycoprotein/glycopeptide enrichment	NuTip	Carbon (Graphite)	2008	A. Lucka, et al, Mass Spectrometry and HPLC with Fluorescent Detection-Based Orthogonal Approaches to Characterize N -Linked Oligosaccharides of Recombinant Monoclonal Antibodies, Methods in Molecular Biology, Volume 446, Post-translational Modifi cations of Proteins, Humana Press, p. 347-36 (2008)	"Hypercarb TopTip (Glygen Corp) (available in 3 bindingcapacity levels)"
Glycoprotein/glycopeptide enrichment	NuTip	Carbon (Graphite)	2008	Rapha Carapito, Christine Carapito, Jean-Marc Jeltsch and Vincent Phalip,Efficient hydrolysis of hemicellulose by a Fusarium graminearum xylanase blend produced at high levels in Escherichia coli., Bioresource Technology, Article in Press, Corrected Proof doi:10.1016/j.biortech. 2008.	"...Polysaccharideswere desalted using a Nu-Tip type P20 carbon solid-phase extraction pipette tip (Glygen, USA)."
Glycoprotein/glycopeptide enrichment	NuTip	Carbon (Graphite)	2006	Vivianne I. Otto , et al: N-Glycan Structures and N-Glycosylation Sites of Mouse Soluble Intercellular Adhesion Molecule-1 Revealed by MALDI-TOF and FTICR Mass Spectrometry Glycobiology Advance Access published online on July 28, 2006 Glycobiology, doi:10.1093/glycob/cwl032	"NuTip graphitized carbon 10-µL pipette tips were from Glygen (Columbia, MD)."
Glycoprotein/glycopeptide enrichment	NuTip	Carbon (Graphite)	2006	Wouter Laroy, Roland Contreras and Nico Callewaert. Glycome mapping on DNA, sequencing equipment. Nature Protocols 1, 397-405 (2006)	
Glycoprotein/glycopeptide enrichment	NuTip	Carbon (Graphite)	2006	Takashiba M, Chiba Y, Jigami Y. Identification of phosphorylation sites in N-linked glycans by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry. Anal. Chem. 2006 Jul 15; 78(14):5208-13.	"After HPLC separation, the phosphorylated glycans were purified using ion-exchange resin Muromac and applied to porous graphitic carbon (PGC) cartridges (Nutip Carbon and GL-Pak Carbograph) for desalting"
Glycoprotein/glycopeptide enrichment	NuTip	Carbon (Graphite)	2006	Leah Cueni. A method for the qualitative and quantitative analysis of the glycosylation pattern of mouse soluble intercellular adhesion molecule-1 (sICAM-1), Institute of Pharmaceutical Sciences (Diploma Thesis), 2006.	"Samples were desalted prior to mass spectrometric analyses using NuTip™ graphitized carbon 10µl pipette tips (Glygen Corp., Columbia, MD). Tips were conditioned by pipetting five times 10µl of 60% acetonitrile containing 0.05% trifluoroacetic acid (TFA) followed by three times 10µl of water."
Glycoprotein/glycopeptide enrichment	NuTip	Carbon (Graphite)	2006	Kameyama A, Nakaya S, Ito H, Kikuchi N, Angata T, Nakamura M, Ishida HK, Narimatsu H, Strategy for simulation of CID spectra of N-linked oligosaccharides toward glycomics. J Proteome Res. 2006 Apr; 5(4):808-14.	"The filtrates were desalted by using a NuTip Hypercarbon (Glygen Corp., Columbia, MD)..."
Glycoprotein/glycopeptide enrichment	NuTip	P-20	2009	Raphael Carapito, Christine Carapito, Jean-Marc Jeltsch, Vincent Phalip, Efficient hydrolysis of hemicellulose by a Fusarium graminearum xylanase blend produced at high levels in Escherichia coli, Bioresource Technology, Volume 100, Issue 2, January 2009, Pages 845-850.	"...the polysaccharides were desalted using a NuTip type P20 carbon solid-phase extraction pipette tip (Glygen, USA)."
Glycoprotein/glycopeptide enrichment	NuTip and TopTip	POROS P-2	2008	DS Spellman, TA Neubert Analysis of Posttranslational Modifications, Proteomics of the Nervous System, 2008 – books.google.com	
Glycoprotein/glycopeptide enrichment	NuTip and TopTip	POROS P-2	2008	JT Adamson Structural Characterization of Protein Glycosylation Utilizing Fragmentation from Gas Phase Ion, 2008 -, ... A dissertation submitted in partial fulfillment of the requirements for the degree, of Doctor of Philosophy (Chemistry) in The University of Michigan 2008.	
Glycoprotein/glycopeptide enrichment	TopTip	Carbon (Graphite)	2011	DA Sela, et al. An infant-associated bacterial commensal utilizes breast milk sialyloligosaccharides. Journal of Biological Chemistry, 2011, doi: 10.1074/jbc.M110.193359	"...all samples desalted using porous graphitized carbon Top Tip solid phase extraction cartridges (Glygen, Columbia, MD)..."
Glycoprotein/glycopeptide enrichment	TopTip	Carbon (Graphite)	2006	An HJ, et al. Related Articles, Profiling of glycans in serum for the discovery of potential biomarkers for ovarian cancer. J Proteome Res. 2006;5(7):1626-35	

Application	Glygen product	Media	Year	Publication	Excerpt
Glycoprotein/glyco-peptide enrichment	TopTip	Carbon (Graphite)	2005	Lei Zhu, et.al Production of human monoclonal antibody in eggs of chimeric chickens, Nature Biotechnology 23, 1159 1169 (2005)	"The released carbohydrates were desalted on a micro-carbon column from Glygen"
Glycoprotein/glyco-peptide enrichment	TopTip	Lectin	2008	Kazutosi Kubota, Yuji Sato, Yusuke Suzuki, Naoko Goto-Inoue, Tosifusa Toda, Minoru Suzuki, Shin-ichi Hisanaga, Akemi Suzuki and Tamao Endo, Analysis of Glycopeptides Using Lectin Affinity Chromatography with MALDI-TOF Mass Spectrometry, Anal. Chem., 2008, 80 (10), pp 3693–3698	"Top Tips were purchased from Glygen Corp. (Columbia, MD)."
Glycoprotein/glyco-peptide enrichment	TopTip	Lectin	2007	Carol L. Nilsson, Lectins: Analytical Tools from Nature, In: Carol L. Nilsson, Editor(s), Lectins, Elsevier Science B.V., Amsterdam, 2007, Pages 1-13.	
Glycoprotein/glyco-peptide enrichment	TopTip	Lectin	2006	T Adamson, K Hakansson, Infrared Multiphoton Dissociation and Electron Capture Dissociation of High MannoseType Glycopeptides". J. Proteome Res. 2006, 5, 493.	"...Concanavalin A tips (Glygen Corporation, Columbia, MD) were used to selectively bind glycopeptides."
Glycoprotein/glyco-peptide enrichment	TopTip	Lectin	2004	N. I. Taranenko, A. K. Shukla, M. M. Shukla, V. M. Doroshenko. Effects of Lectins Affinity Chromatography on Glycoproteins Enrichment Using AP-MALDI Ion Trap Mass Spectrometry (2004)	"After digestion, an aliquot of digested peptides and glycopeptides was applied to 10 µl immobilized lectin columns (TopTip)."
Glycoprotein/glyco-peptide enrichment	TopTip	HILIC	2006	J. Connolly, et al. Proteomic analysis of Brucella abortus cell envelope and identification of immunogenic candidate proteins for vaccine development. PROTEOMICS Volume 6, Issue 13 (2006) , Pages 3767 – 3780	"...was resuspended in binding solution (15 mM ammonium acetate, pH 3.5, with 85% ACN) and loaded onto a hydrophilic interaction TopTip HILIC column"
Glycoprotein/glyco-peptide enrichment	TopTip	SAX	2010	Ming Lei, et al, 'Sequential Enrichment of Sulfated Glycans by Strong Anion-Exchange Chromatography Prior to Mass Spectrometric Measurements,' J Am Soc Mass Spectrom, 2010, 21, 348-357	"Sequential enrichment of sulfated glycans is attained using spin-columns packed with Strong Anion exchanger"
Glycoprotein/glyco-peptide enrichment			2004	Ashok K. Shukla, Mukta M. Shukla, Vladimir M. Doroshenko, Nelli I. Taranenko. Applications of Glycosidase in Glycoproteins Structure Determination by AP-MALDI MS/MS Analysis. ASMS 2004	
Glycoprotein/glyco-peptide enrichment			2004	N. I. Taranenko, A. K. Shukla, M. M. Shukla, V. M. Doroshenko Effects of Lectins Affinity Chromatography on Glycoproteins Enrichment Using AP-MALDI Ion Trap Mass Spectrometry. (ASMS 2004)	
Antibody enrich-ment	TopTip	Protein A	2007	Emma Lundberg, et al. A novel method for reproducible fluorescent labeling of small amounts of antibodies on solid phase. doi:10.1016/j. jim.2007.01.023, Journal of Immunological Methods Vol 322, Issues 1-2, April 2007, pp 40-49	"Micropipette tips (TopTip 10–200 µl) filled with protein A affinity medium were obtained from Glygen Corp."
DNA purification	TopTip	DNAPure WAX	2010	H Manduzio, et al. Evaluation of the LTQ-Orbitrap mass spectrometer for the analysis of polymerase chain reaction products. Rapid Communications in Mass Spectrometry, Volume 24, Issue 24, pages 3501–3509, 30 December 2010	"The purification was performed using...tips filled with anion-exchange resin."
DNA purification	TopTip	DNAPure WAX	2010	H Manduzio, et al. Comparison of approaches for purifying and desalting polymerase chain reaction products prior to electrospray ionization mass spectrometry. Anal Biochem 398(2):272-4 (2009).	"The last purification method used involved anion-exchange spin columns (TopTip..., [Glygen]...)"
Small molecule enrichment	TopTip		2009	Siegel Marshall M: "GPC Spin Column HPLC–ESI-MS Methods for Screening Drugs Noncovalently Bound to Proteins," Ligand-Macromolecular Interactions in Drug Discovery: Methods and Protocols, 2009.	
Small molecule enrichment			2007	MM Siegel Mass spectrometry in medicinal chemistry, 2007 books.google.com Drug Screening Using Gel Permeation Chromatography Spin Columns Coupled with ESI	
Detergent removal	TopTip	HILIC	2011	A Rahman, et al. Biomolecular characterization of allergenic proteins in snow crab (Chionoecetes opilio) and de novo sequencing of the second allergen arginine kinase using tandem mass spectrometry. Journal of Proteomics,Volume 74, Issue 2, 1 February 2011, p. 231-241.	"[SDS removal protocol using] TopTip filters with PolyHydroxyethyl (HILIC) resin..."
Detergent removal	TopTip	HILIC	2010	A Rahman, et al. Absolute quantification method and validation of airborne snow crab allergen tropomyosin using tandem mass spectrometry. Analytica Chimica Acta, Volume 681, Issues 1-2, 29 November 2010, p. 49-55.	"SDS removal protocol using TopTip filters supplied with HILIC resin..."
Automated sample preparation	iTip	C18	2010	Keidel, Eva-Maria, et al. Automated sample preparation and spotting on MALDI target plates using the Agilent Bravo Automated Liquid Handling Platform. Agilent Technologies Application Note, July 27, 2010.	"...peptide mass fingerprints produced by the automatic workflow performed equally well or better than the manual process... the whole process is carried out in a reproducible and timesaving manner."
HPLC and online sample preparation	LC-Fiber		2005	MM Shukla, AK Shukla, G Barka, N Manohar, NI Taranenko Use of Chromatographic Hollow Fiber for Purification and Separation of Peptides for AP-MALDI, ABRF 2005; P37-S.	
HPLC and online sample preparation	LC-Fiber		2004	Mukta M. Shukla , Ashok K. Shukla, Vladimir M. Doroshenko, Nelli I. Taranenko Nanoliter Solid Phase Extraction (SPE) Using Chromatographic Hollow Fibers for Sample Preparation for Mass Spectrometry (ASMS 2004)	
HPLC and online sample preparation	LC-Fiber		2003	Mukta M. Shukla, Ashok K. Shukla, Eric D. Stover, and Andreas F. Huhmer. Chromatographic Hollow Fiber. ASMS 2003	
MALDI spotting/ ultra-micro SPE	MALDI Pen		2011	Urban, P. L., Amantonico, A. and Zenobi, R. , Lab-on-a-plate: Extending the functionality of MALDI-MS and LDI-MS targets. Mass Spectrometry Reviews, n/a. doi: 10.1002/mas.20288 (20 Jan 2011).	"Sample treatment can also be partly performed using an integrated 'MALDI pen' (Glygen, 2009)"
MALDI spotting/ ultra-micro SPE	MALDI Pen		2006	Mukta M. Shukla, Ashok K. Shukla, Nelli I. Taranenko, Vladimir M. Doroshenko, Sample Concentrator for AP-MALDI Plate. ASMS 2006.	
MALDI spotting/ ultra-micro SPE	Gel-Loader Tip	TiO_2+ZrO_2	2006	Christopher J. Toher, Adam W. Perala, Ashok K. Shukla, Gary A. Valaskovic: Offline Nano-ESI Phosphopeptide Analysis with TiO_2, and ZrO_2 Wall-Coated Trap'nTips™, ASMS 2006	
MALDI spotting/ ultra-micro SPE	Gel-Loader Tip		2005	C Toher , Adam W. Perala , Ashok K. Shukla , Gary A. Valaskovic Sample Purification for Static Nanospray MS Using Wall-Coated Pipette Trap'nTips™ , I (ASMS 2005)	

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