

Thermo Scientific  
Pierce Magnetic Beads

# magnetic bead technology for better assay development

custom magnetic particles • immunoprecipitation • affinity purification

**Thermo**  
SCIENTIFIC

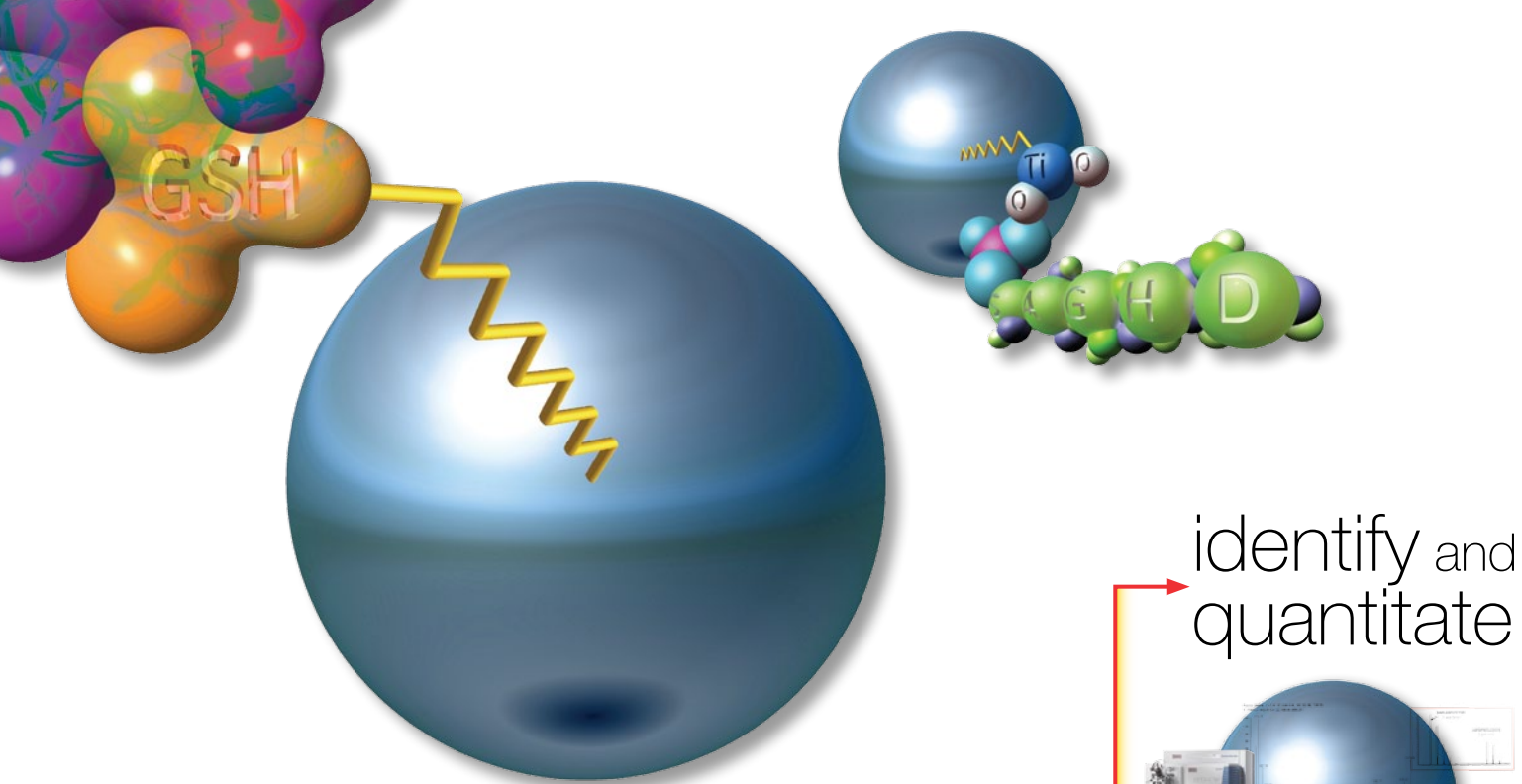


exceptional bead technology  
for **protein biology**

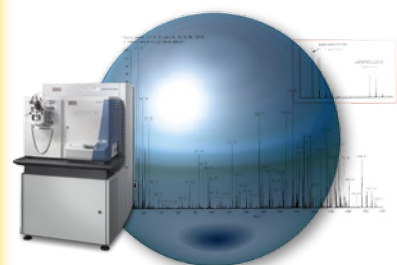
Streptavidin

**Thermo Scientific Pierce  
Magnetic Beads** are available

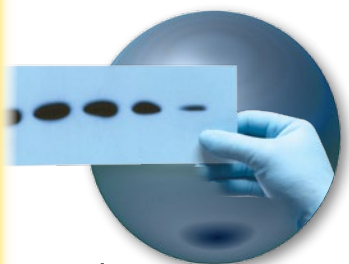
for immunoprecipitation, affinity purification as well as custom magnetic particle creation. The high-performance, iron oxide, superparamagnetic particles are validated and optimized for use with high-throughput magnetic platforms, such as the Thermo Scientific KingFisher Duo and KingFisher Flex Instruments. Samples can be analyzed by Western blotting or on Thermo Scientific Mass Spectrometers for quantitation of low abundant targets.



Identify and  
quantitate



Identify and quantitate  
your analyte using  
Thermo Scientific Mass  
Spectrometers and  
labeling reagents



detect

Use our highly sensitive  
substrates for Western  
blot detection

lyse → target → isolate →



Prepare cells, tissue or  
fluid samples with Thermo  
Scientific Lysis Reagents

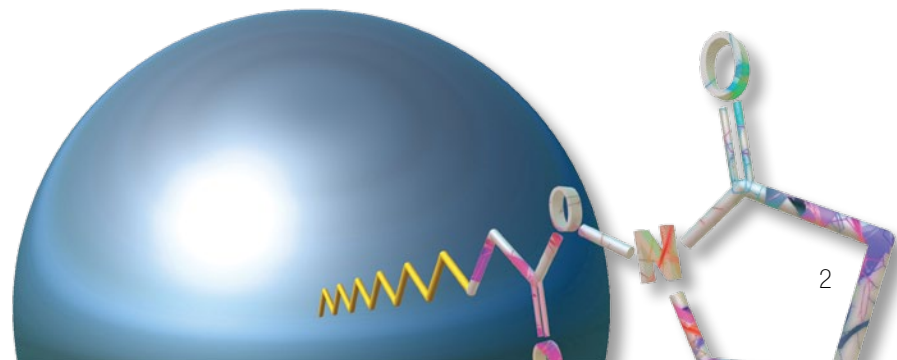


Isolate your target with one  
of our magnetic beads:

- **Magnetic NHS** for creating custom affinity resin
- **Magnetic Protein A/G** for immunoprecipitation
- **Magnetic Streptavidin** for biotin pull-downs
- **Magnetic Glutathione** for GST-tagged protein purification
- **Magnetic Titanium Dioxide** for phosphopeptide enrichment



Choose to run a few  
samples on the bench or  
create a high-throughput  
assay with KingFisher®  
Instruments



# immobilize your ligand

for custom magnetic assays

## Magnetic Protein Immobilization Beads

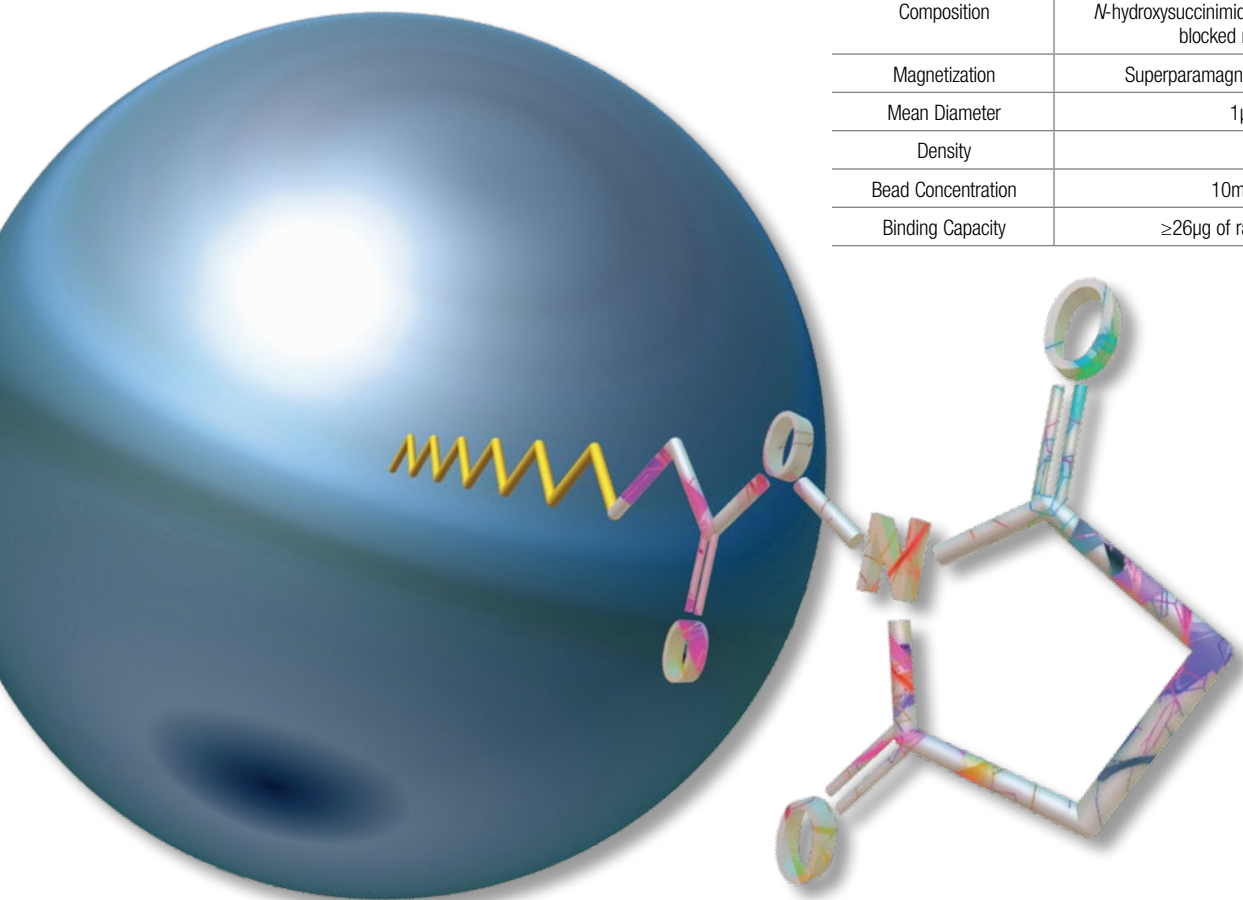
**Thermo Scientific Pierce NHS-Activated Magnetic Beads** enable covalent, amine-based conjugation of proteins to magnetic beads in a simple mix-and-go format for use in custom affinity purification experiments. The activated magnetic beads contain *N*-hydroxysuccinimide (NHS) functional groups that react with primary amines, forming stable amide linkages. Once they are covalently attached, the immobilized proteins are highly resistant to leaching from the bead surface. When prepared beads are used in experiments, nonspecific binding is negligible because nonreacted NHS-ester groups are thoroughly blocked during the coupling procedure.

### Highlights

- **High capacity** – at least four times greater binding capacity than NHS-activated magnetic beads from other suppliers
- **Easy to use** – immobilize in a simple one-step reaction with minimal hands-on time
- **Safe** – no hazardous chemicals (e.g., sodium cyanoborohydride and cyanogen bromide) needed
- **Ligand compatible** – use to immobilize with nearly any primary amine-containing compound or affinity ligand
- **Low nonspecific binding** – the bead surface is pre-blocked and any nonreacted NHS-ester groups are fully quenched
- **Protocol compatible** – protein coupling to the beads and downstream applications can be performed manually or by automation (e.g., KingFisher Instruments)

**Table 1. Properties of Thermo Scientific Pierce NHS-Activated Magnetic Beads.**

Composition	<i>N</i> -hydroxysuccinimide (NHS) functional groups on a blocked magnetic bead surface
Magnetization	Superparamagnetic (no magnetic memory)
Mean Diameter	1 $\mu\text{m}$ (nominal)
Density	2.0g/cm <sup>3</sup>
Bead Concentration	10mg/mL in DMAC
Binding Capacity	$\geq 26\mu\text{g}$ of rabbit IgG/mg of beads



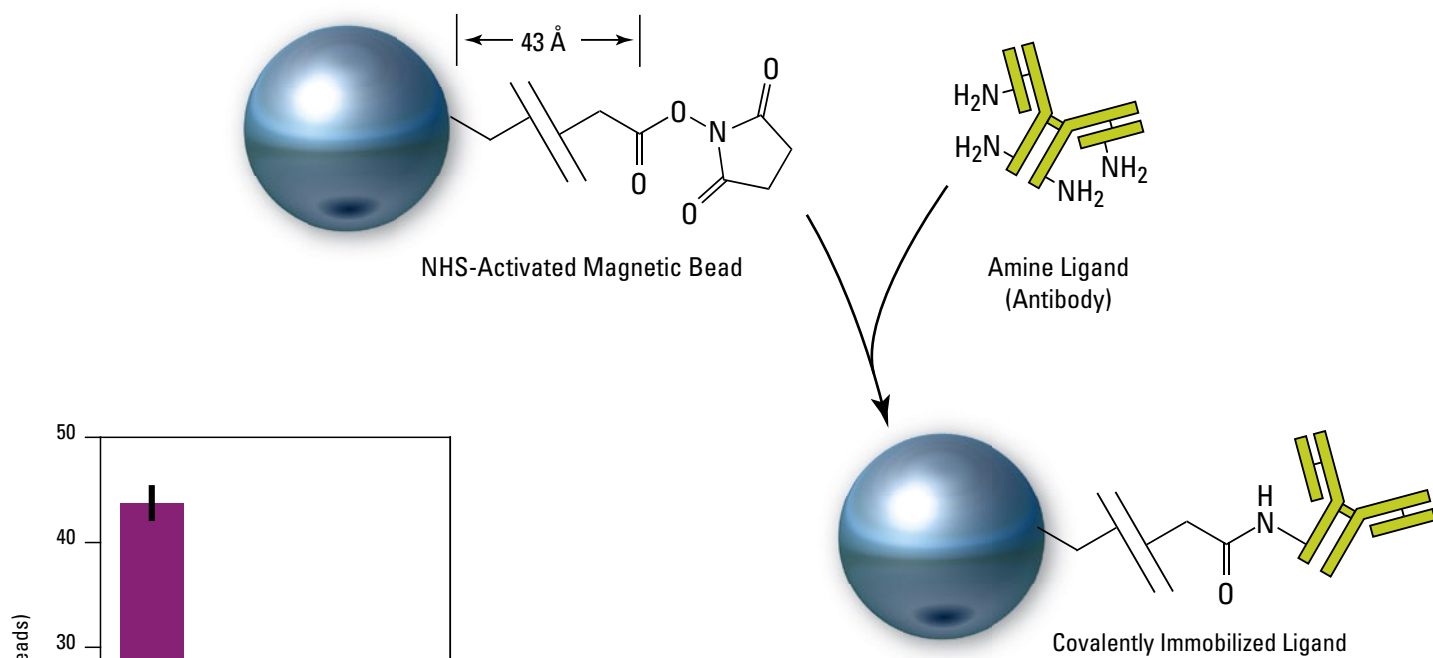
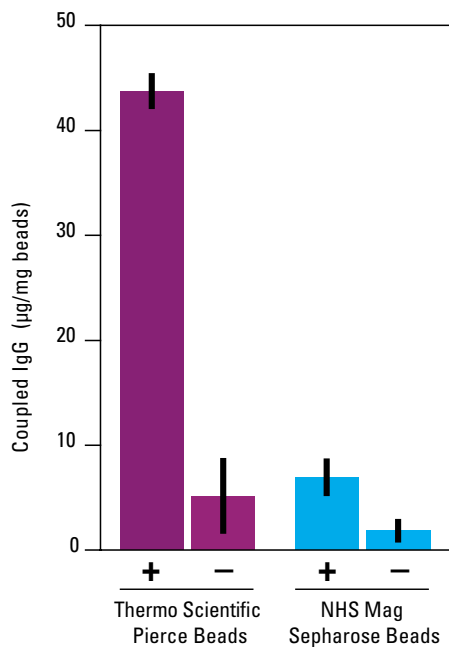


Figure 2. Reaction scheme for conjugation of protein onto Thermo Scientific Pierce NHS-Activated Magnetic Beads.



**Figure 1. Significantly better coupling capacity with Thermo Scientific Pierce NHS-Activated Magnetic Beads.** Rabbit IgG (1 mg/mL) was coupled in PBS for 2 hours at pH 7.2 to 3 mg each of Pierce® NHS-Activated Magnetic Beads and NHS Mag Sepharose® Beads (GE Life Sciences). Negative control beads (-) were prepared by quenching or blocking using respective manufacturer protocols. Bound protein was measured using the Thermo Scientific Pierce 660nm Protein Assay by subtracting the amount of protein in the flow-through from the amount loaded. The Pierce Beads coupled more than four times as much protein as the equivalent amount of NHS Mag Sepharose Beads.



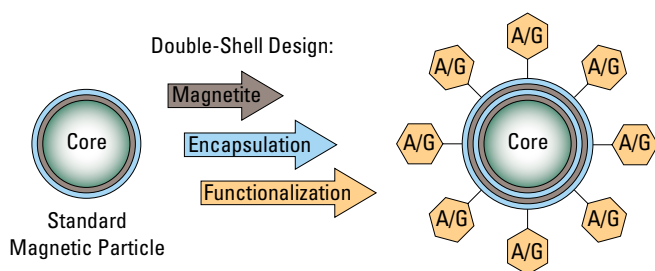
### Ordering Information

Product #	Description	Pkg. Size
88826	<b>Pierce NHS-Activated Magnetic Beads</b> Sufficient for: Binding ≥ 26µg of rabbit IgG/mg of beads	1 mL
88827	<b>Pierce NHS-Activated Magnetic Beads</b> Sufficient for: Binding ≥ 26µg of rabbit IgG/mg of beads	5 mL

# build your own immunoprecipitation assay

## Magnetic Immunoprecipitation Beads

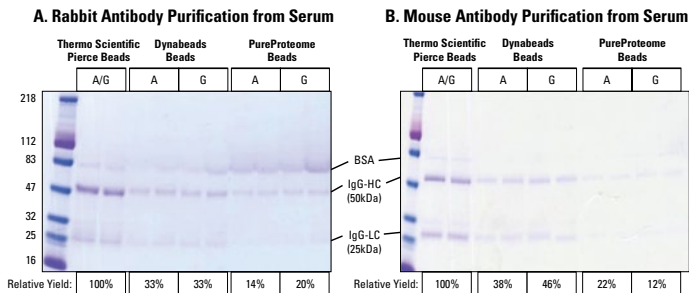
**The Thermo Scientific Pierce Protein A/G Magnetic Bead** is a single particle that is compatible with all commonly used antibodies for immunoprecipitation (IP). These beads are coated with genetically engineered Protein A/G, a recombinant protein that combines the IgG binding domains of both Protein A and Protein G. This combination enables the capture of antibodies from a wider range of species and isotypes than either protein alone. Using our crosslinker chemistry, you can immobilize an antibody onto the magnetic particle and prevent IgG contamination in your immunoprecipitated sample.



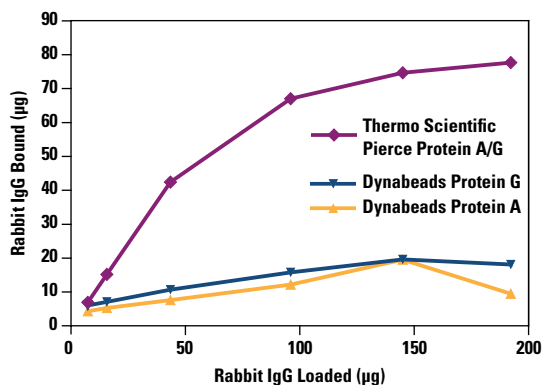
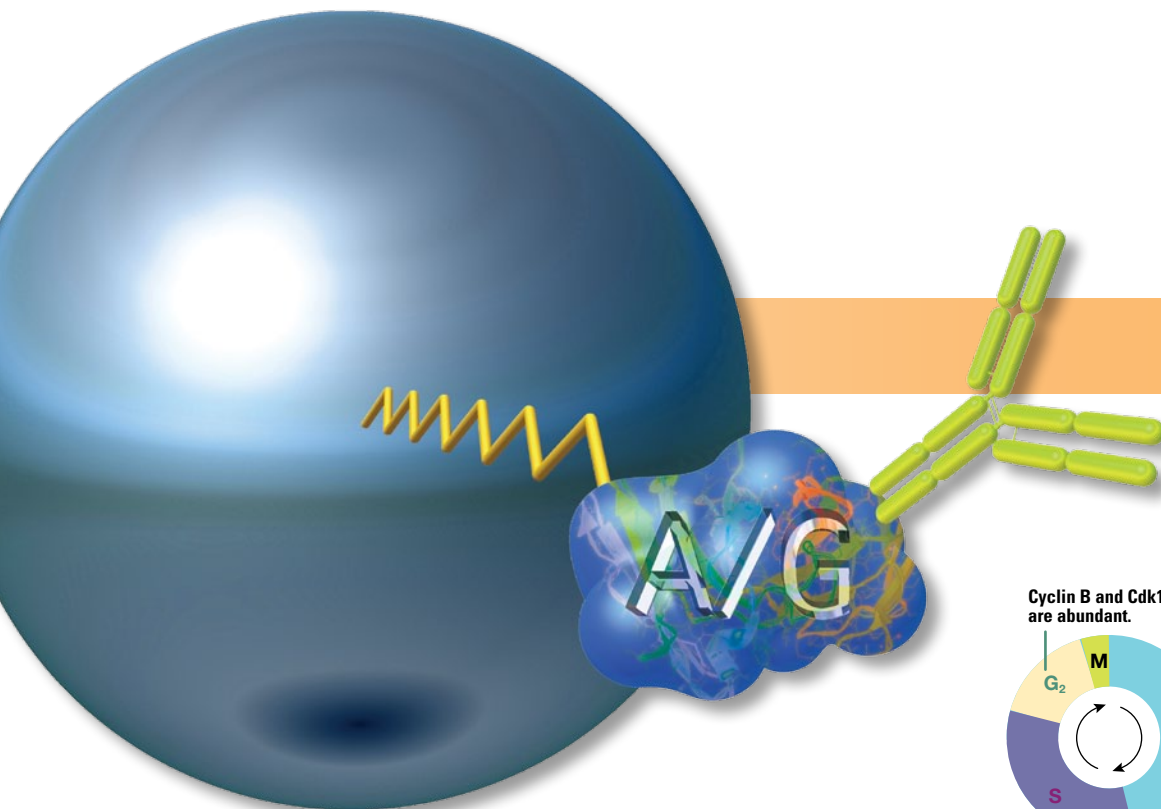
**Figure 3. Diagram of Thermo Scientific Pierce Protein A/G Magnetic Beads.** The magnetic particles are 1 µm in diameter and are specially manufactured with two layers of magnetite and encapsulation. Recombinant Protein A/G is coupled to the bead surface.

### Highlights

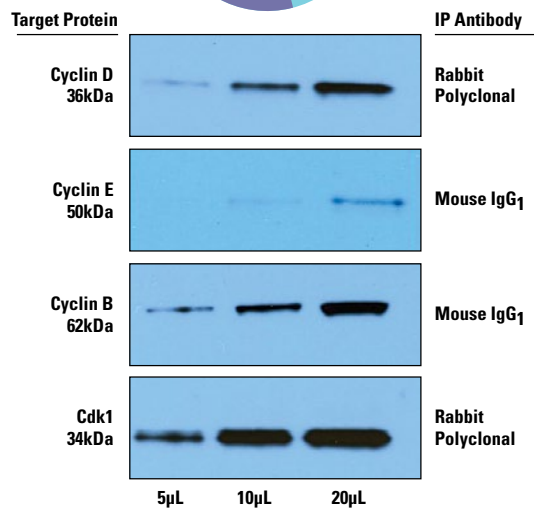
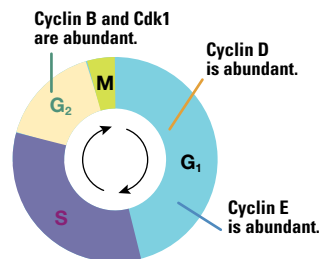
- **Compatible** – one magnetic bead type that can capture most primary antibodies
- **Fast** – immunoprecipitating in as few as 30 minutes helps reduce nonspecific binding and improves the capture of transient protein complexes
- **Clean** – immobilize your antibody to prevent contamination in your eluate
- **Resistant** – no leaching of Protein A/G in the presence of detergents, low pH buffers or common mass spectrometry solvents
- **Efficient** – immunoprecipitate with half the recommended volume of magnetic particles compared to other magnetic beads



**Figure 4. Thermo Scientific Pierce Protein A/G Magnetic Beads isolate significantly more IgG from rabbit and mouse serum with less background than other brands of Protein A and Protein G magnetic particles.** Using a KingFisher Flex Instrument with a 96 deep well plate, IgG was purified from 5mg of rabbit and mouse serum using 50µL of Pierce Protein A/G Magnetic Beads, Dynabeads® Protein A or G (Life Technologies), or PureProteome® Protein A or G Beads (Millipore). The beads were washed with Tris buffered saline containing 0.05% Tween®-20 (TBST), incubated 1 hour with serum diluted in TBST, washed three times, and then eluted with 0.1M glycine, pH 2.8 for 10 minutes at room temperature. The eluates were resolved by SDS-PAGE and stained with Thermo Scientific Imperial Protein Stain. **Panel A:** Rabbit serum; **Panel B:** Mouse serum. The IgG heavy chain bands were quantified by densitometry. The values for each set of duplicate bands were averaged and expressed as a percentage of the average for the Pierce Protein A/G Magnetic Beads.



**Figure 5.** The rabbit IgG binding capacity of Thermo Scientific Pierce Protein A/G Magnetic Beads is approximately four times greater than that of the leading brand of Protein A and Protein G beads. Pierce Protein A/G Magnetic Beads or Dynabeads Protein A or Protein G (Life Technologies) were added to a 96 deep-well plate (1mg beads per well). Using the KingFisher 96 Instrument, the beads were incubated for one hour with varying amounts of purified rabbit IgG (20 to 200µg). After binding, the samples were eluted at 96°C with SDS-PAGE reducing sample buffer. Binding was calculated using the Thermo Scientific BCA Protein Assay.



**Figure 6.** The Thermo Scientific Pierce Protein A/G Magnetic Beads effectively immunoprecipitate (IP) cell cycle proteins Cyclin D, Cyclin E, Cyclin B and Cdk1. U2OS (human osteosarcoma) cells were synchronized at G<sub>0</sub>, followed by growth in 20% fetal bovine serum for 4, 6 and 18 hours before harvest. The cells were lysed in IP Lysis/Wash Buffer, and 0.75mg of lysate (per sample) was incubated with anti-Cyclin D (rabbit polyclonal), anti-Cyclin E (mouse IgG<sub>1</sub>), anti-Cyclin B (mouse IgG<sub>1</sub>) or anti-Cdk1 (rabbit polyclonal) antibodies overnight at 4°C. The Pierce Protein A/G Magnetic Beads were added (50µL each) to a 96 deep-well plate and immunoprecipitations were performed using the KingFisher Flex Instrument. Eluted sample volumes of 5µL, 10µL and 20µL were resolved by SDS-PAGE and analyzed by Western blot.



### Ordering Information

Product #	Description	Pkg. Size
88802	<b>Pierce Protein A/G Magnetic Beads</b> Sufficient for: Binding 55 to 85µg rabbit IgG/mg beads.	1 mL
88803	<b>Pierce Protein A/G Magnetic Beads</b> Sufficient for: Binding 55 to 85µg rabbit IgG/mg beads.	5 mL

# select an easy-to-use validated kit

## Magnetic Immunoprecipitation (IP) Kits

**Thermo Scientific Pierce Magnetic IP/Co-IP Kits** are optimized to isolate protein complexes from biological samples. Each kit contains all the required buffers and beads validated to deliver the best results. Three versions of the kit are available to perform a classic IP, crosslink IP or direct IP.

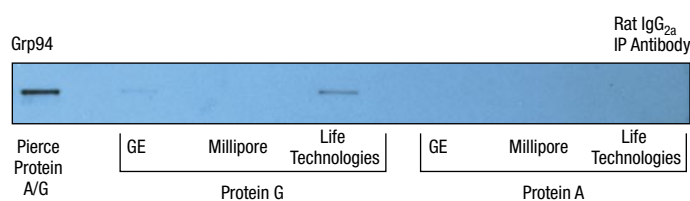
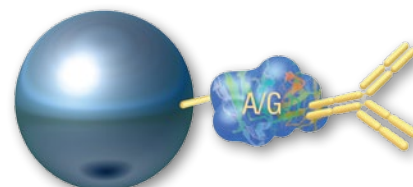
### Kit Highlights

- Compatible with any antibody
- Faster IPs for less background
- Easily capture transient protein complexes
- No antibody contamination in your eluted sample
- Simple handling with no sample loss
- Validated for automated protocols using KingFisher Instruments

**The Pierce Classic Magnetic IP/Co-IP Kit** uses high binding capacity Pierce Magnetic Protein A/G Beads to deliver clean and consistent co-immunoprecipitations (co-IP) with any common antibody. Antibodies are not linked to the resin and will co-elute with your antigen.

### Select this version:

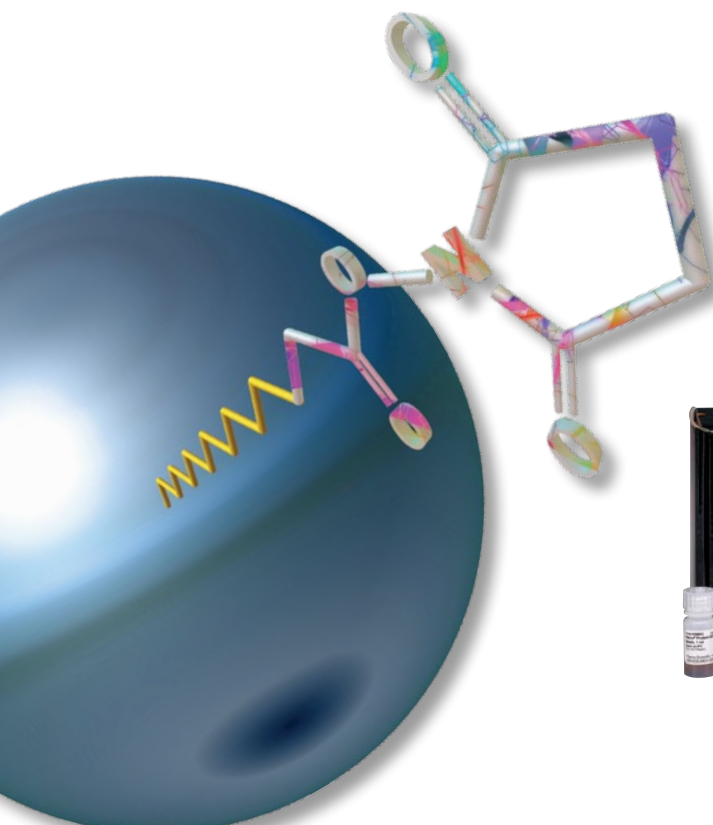
- For highest antigen yield
- If antibody contamination is not a concern



**Figure 7. The Thermo Scientific Pierce Classic Magnetic IP/Co-IP Kit immunoprecipitates Grp94 with higher yield than other Protein A and Protein G beads.** MOPC (mouse myeloma) cells were lysed in RIPA buffer and 0.75mg of lysate was incubated with Grp94 antibody (rat IgG<sub>2a</sub>) overnight at 4°C. Using the KingFisher Flex Instrument, 50µL of Pierce Protein A/G Magnetic Beads and 50µL each of Protein A or Protein G beads from Life Technologies, Millipore and GE were added to a 96 deep-well plate. The eluates were resolved by SDS-PAGE and analyzed by Western blot for Grp94.

### Ordering Information

Product #	Description	Pkg. Size
88804	<b>Pierce Classic Magnetic IP/Co-IP Kit</b> Sufficient for: 40 IP reactions using 25µL of beads Contains: Pierce Protein A/G Magnetic Beads, 1mL Pierce IP Lysis/Wash Buffer, 2 x 50mL Lane Marker Sample Buffer (5X), 5mL Elution Buffer, 5mL Neutralization Buffer, 0.5mL	40-rxn kit

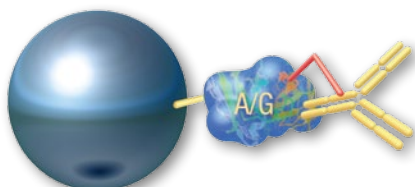




**The Pierce Crosslink Magnetic IP/Co-IP Kit** uses crosslinkers to immobilize your primary antibody to Protein A/G. This prevents antibody contamination in your eluted sample and eliminates antibody interference in Western blot and mass spec applications.

**Select this version:**

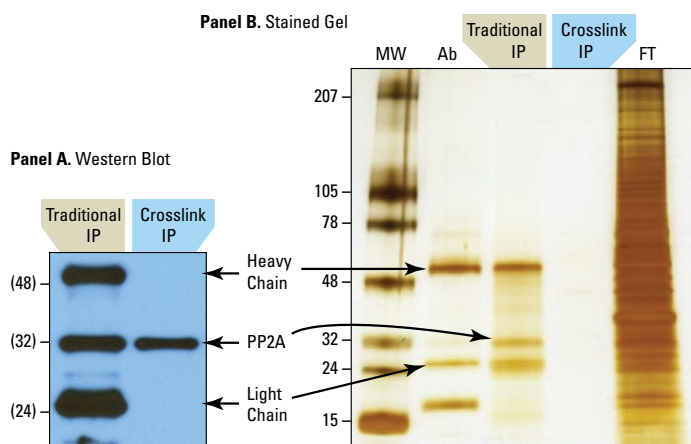
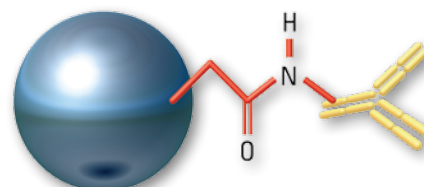
- To eliminate antibody contamination that interferes with downstream detection
- Properly orient your antibody



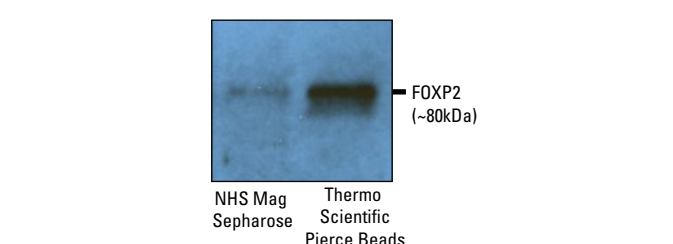
**The Pierce Direct Magnetic IP/Co-IP Kit** uses Pierce NHS-Activated Magnetic Beads to immobilize your primary antibody directly to the bead surface. This method is independent of antibody species and prevents antibody contamination in your eluted sample.

**Select this version:**

- For non-traditional antibodies that do not bind Protein A or Protein G
- To eliminate antibody contamination



**Figure 8. The Thermo Scientific Pierce Crosslink Magnetic IP/Co-IP Kit immunoprecipitates PP2A without antibody contamination and with negligible background.** PP2A antibody (5µg) was coupled to Pierce Protein A/G Magnetic Beads without DSS crosslinking (traditional IP) and with DSS crosslinking (crosslink IP). The beads were incubated with 0.5mg of A549 cell lysate for 1 hour at room temperature on the KingFisher Flex Instrument. PP2A was eluted from the beads with Elution Buffer for 5 minutes at room temperature and then neutralized with Neutralization Buffer. The eluates, antibody control (Ab) and flow-through (FT) were resolved by SDS-PAGE and analyzed by Western blot for PP2A (**Panel A**) and by silver stain for antibody contamination and nonspecific binding (**Panel B**). The antibody-crosslinked Pierce Protein A/G Magnetic Beads effectively immunoprecipitated PP2A without antibody contamination whereas the traditional IP method resulted in significant antibody contamination in the eluate.



**Figure 9. Better immunoprecipitation results with Thermo Scientific Pierce NHS-Activated Magnetic Beads.** Anti-FOXP2 antibody (5µg) was coupled to 25µL of Pierce NHS-Activated Magnetic Beads and an equivalent amount of NHS Mag Sepharose (GE Life Sciences). The two sets of prepared beads were then used to immunoprecipitate FOXP2 from 0.5mg aliquots of the same 293T (human epithelial kidney) cell lysate. The eluates were resolved by SDS-PAGE and analyzed by Western blot for FOXP2.

**Ordering Information**

Product #	Description	Pkg. Size
88828	<b>Pierce Direct Magnetic IP/Co-IP Kit</b> Sufficient for: 40 IP reactions using 25µL of beads Contains: Pierce NHS-Activated Magnetic Beads, 1mL IP Lysis/Wash Buffer, 2 x 50mL Elution Buffer, pH 2.0, 5mL Lane Marker Sample Buffer, Non-reducing, (5X), 5mL Neutralization Buffer, pH 8.5, 0.5mL 0.67M Borate Buffer, 1mL BupH Borate Buffer Pack, 1 pack Quenching Buffer, 25mL	40-rxn kit

**Ordering Information**

Product #	Description	Pkg. Size
88805	<b>Pierce Crosslink Magnetic IP/Co-IP Kit</b> Sufficient for: 40 IP reactions using 25µL of beads Contains: Pierce Protein A/G Magnetic Beads, 1mL IP Lysis/Wash Buffer, 2 x 50mL Coupling Buffer (20X), 25mL DSS Crosslinker, 8 x 2mg Lane Marker Sample Buffer (5X), 5mL Elution Buffer, 10mL Neutralization Buffer, 1mL Lane Marker Sample Buffer (5X), 5mL	40-rxn kit

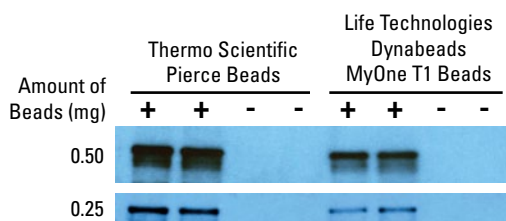
# perform **high-capacity** protein purification

## Magnetic Biotin Pull-Down

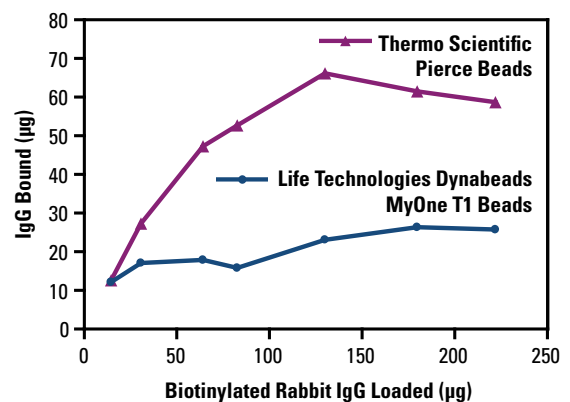
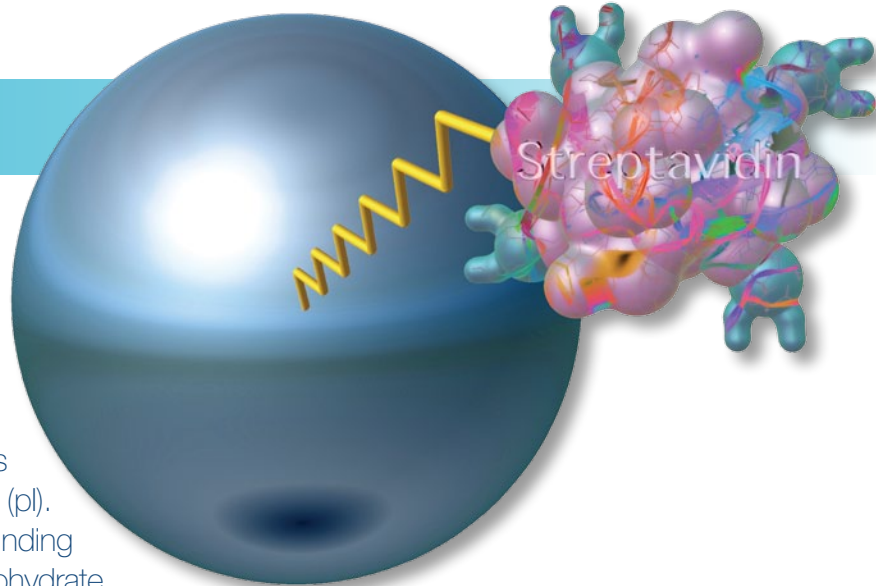
**Thermo Scientific Pierce Streptavidin Magnetic Beads** provide easy affinity purification of biotin-labeled target molecules without columns or centrifugation. Pierce Streptavidin Magnetic Beads use a recombinant form of streptavidin with a mass of 53kDa and a near-neutral isoelectric point (pI). The protein is a tetramer having four biotin-binding sites. Unlike avidin, streptavidin has no carbohydrate groups, resulting in low nonspecific binding. The high-affinity interaction between streptavidin and biotin cannot be dissociated efficiently except with very harsh conditions, such as boiling in sample loading buffer for SDS-PAGE or 8 M guanidine•HCl, pH 1.5. Consequently, it is often possible to elute binding partners in an interaction complex without also eluting the biotinylated component.

### Highlights

- **Stable immobilization chemistry** – streptavidin is immobilized using leach-resistant chemistry
- **High capacity** – superior quality beads with high binding capacity provide rapid and efficient biomolecule purification from complex samples
- **Low nonspecific binding** – stable, pre-blocked beads provide clean purification products that are compatible with mass spectrometry analysis
- **Superior performance** – nearly three times higher binding capacity than typical beads from other suppliers, allowing the use of smaller amounts per experiment



**Figure 10. Better immunoprecipitation results with Thermo Scientific Pierce Streptavidin Magnetic Beads.** MOPC cell lysate (0.75mg per sample) was incubated overnight at 4°C with and without 10µg biotinylated Grp94 antibody. Pierce Streptavidin Magnetic Beads and Life Technologies Dynabeads® MyOne™ Streptavidin T1 Beads were added to a 96 deep-well plate (0.5mg or 0.25mg per well). Eluates were resolved by SDS-PAGE and analyzed by Western blot with anti-Grp94 antibody. About 0.25mg of Pierce Beads gave the same yield as 0.5mg of MyOne Beads.



**Figure 11. Higher binding capacity with Thermo Scientific Pierce Streptavidin Magnetic Beads.** Pierce Streptavidin Magnetic Beads and Life Technologies Dynabeads MyOne Streptavidin T1 Beads were added to a 96 deep-well plate (1mg beads per well). Using the KingFisher 96 Instrument, the beads were washed with phosphate-buffered saline containing 0.05% Tween-20. The beads were then incubated for 1 hour with varying amounts of biotinylated rabbit IgG (20-225µg).



### Ordering Information

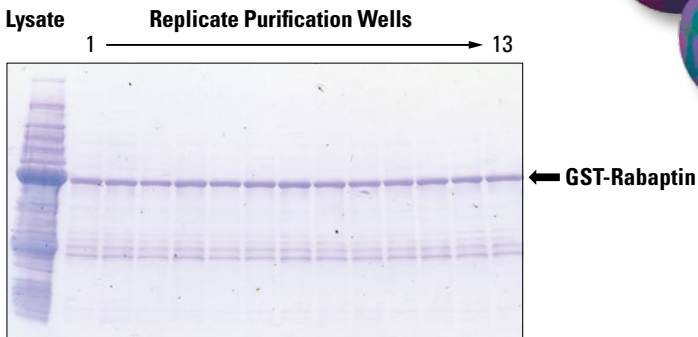
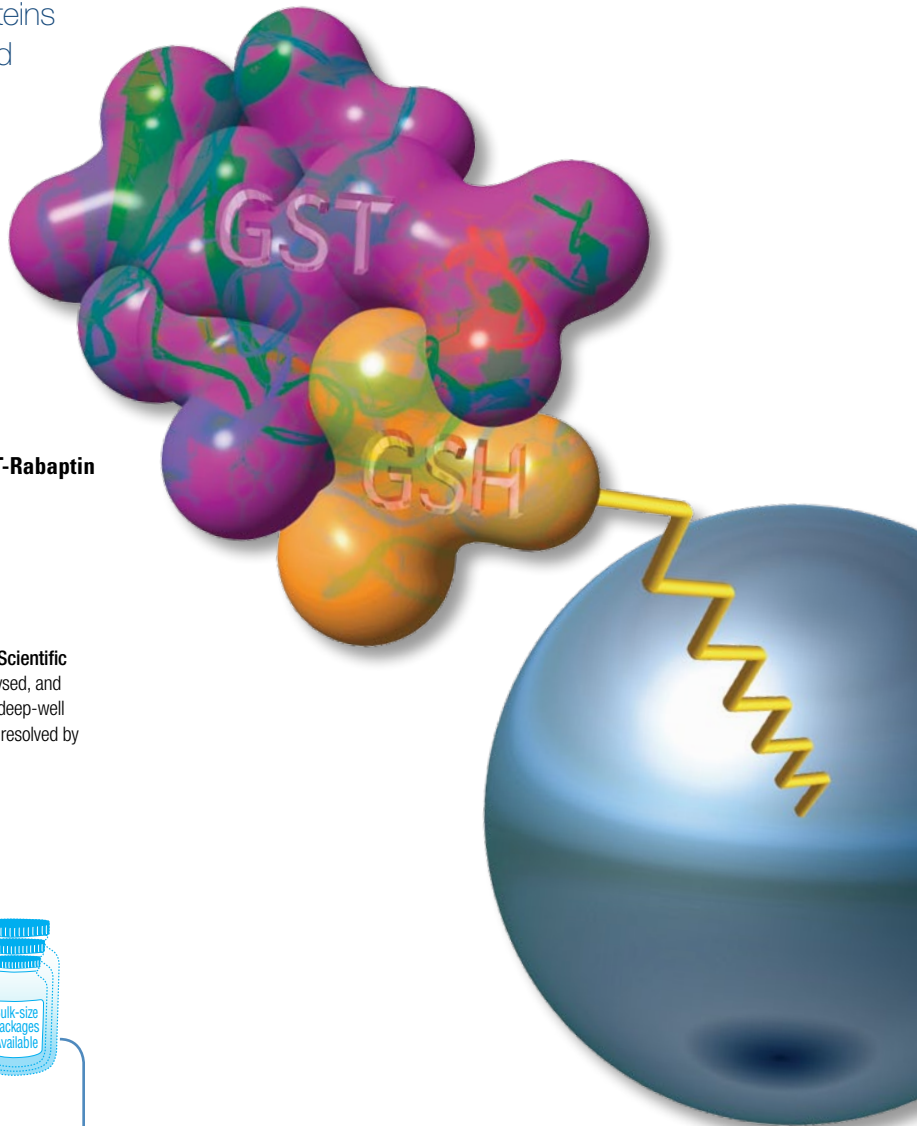
Product #	Description	Pkg. Size
88816	<b>Pierce Streptavidin Magnetic Beads</b> Sufficient for: Binding approx. 55µg biotinylated rabbit IgG per mg of beads (approx. 3500 pmol biotinylated fluorescein per mg of beads)	1 mL
88817	<b>Pierce Streptavidin Magnetic Beads</b> Sufficient for: Binding approx. 55µg biotinylated rabbit IgG per mg of beads (approx. 3500 pmol biotinylated fluorescein per mg of beads)	5 mL

## Magnetic GST-Protein Purification

**Thermo Scientific Pierce Glutathione Magnetic Beads** provide a simple, rapid and reliable method for the purification of glutathione S-transferase (GST) fusion proteins from crude cell lysate prepared from bacteria, yeast or mammalian cells. These beads can be used to isolate GST-tagged proteins or perform pull-down assays using GST-tagged proteins as bait.

### Highlights

- **High binding** – 5-10mg GST/mL settled beads
- **Stable-affinity ligand** – glutathione is covalently immobilized to particles, ensuring leach-resistance and clean purification products
- **High capacity** – binding capacity is sufficient for both routine and demanding magnetic separation procedures



**Figure 12. High-performance purification of a GST fusion protein using Thermo Scientific Pierce Glutathione Magnetic Beads.** Bacterial cells expressing GST-Rabaptin were lysed, and replicate aliquots were processed with the Pierce Glutathione Magnetic Beads in a 96 deep-well plate using a KingFisher 96 Instrument. Eluates were boiled in reducing sample buffer, resolved by SDS-PAGE and stained with coomassie dye. Purity and reproducibility were excellent.



### Ordering Information

Product #	Description	Pkg. Size
88821	<b>Pierce Glutathione Magnetic Beads</b> <i>Sufficient for: Binding 5 to 10mg GST per mL of beads</i>	4mL
88822	<b>Pierce Glutathione Magnetic Beads</b> <i>Sufficient for: Binding 5 to 10mg GST per mL of beads</i>	20mL

# isolate phosphopeptides

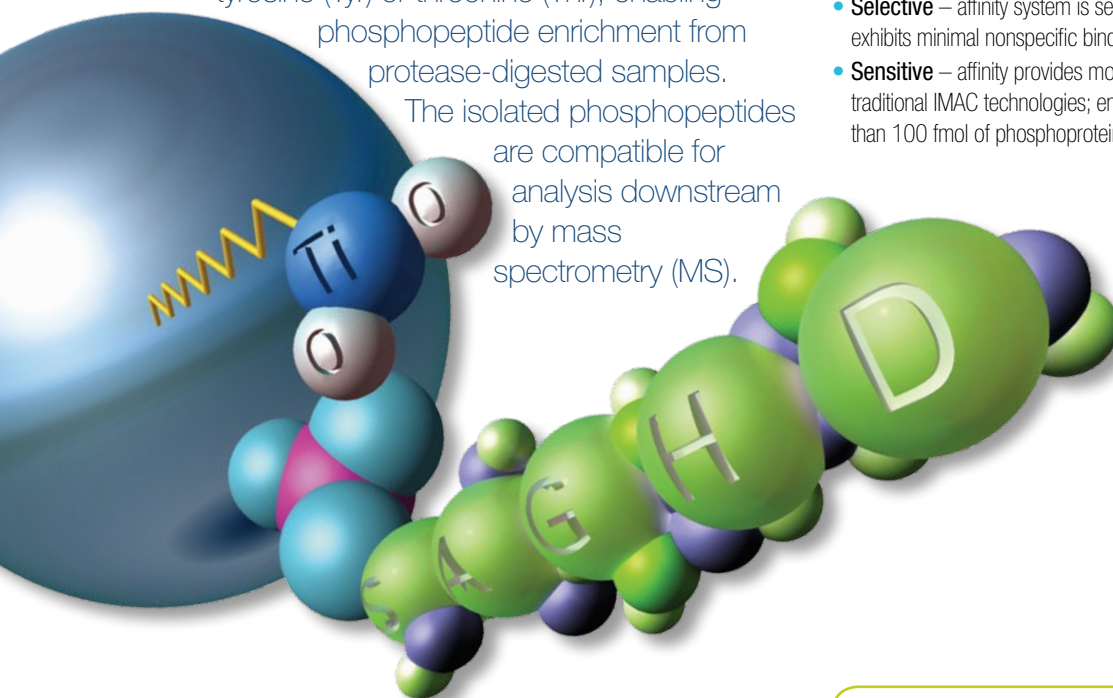
## for mass spec analysis

### Magnetic Phosphopeptide Enrichment

#### The Thermo Scientific Pierce Magnetic Titanium Dioxide Phosphopeptide Enrichment Kit

is for isolating phosphopeptides from complex biological samples using titanium dioxide-coated magnetic beads. The  $TiO_2$  ligand selectively binds peptides containing phosphorylated serine (Ser), tyrosine (Tyr) or threonine (Thr), enabling phosphopeptide enrichment from protease-digested samples.

The isolated phosphopeptides are compatible for analysis downstream by mass spectrometry (MS).



**Table 2. Phosphopeptide enrichment improves MS identification of phosphoproteins.** Two milligrams of a tryptic digest prepared from peripheral blood mononuclear cells (lymphocytes) with and without phosphopeptide enrichment were analyzed by MS. Enrichment was performed with the Pierce Titanium Dioxide Phosphopeptide Enrichment Kit using the KingFisher 96 Instrument. Samples were analyzed on a Thermo Scientific LTQ Orbitrap Mass Spectrometer.

	Enriched	Non-Enriched
Total number of proteins identified	185	247
Total number of phosphoproteins identified	160	1
Total number of peptides identified	2347	2457
Total number of phosphopeptides identified	2009	7
Total number of unique phosphopeptides identified	177	1
Relative enrichment for phosphopeptides (%)	86	0.3

#### Highlights

- **Complete MS-compatible kits** – include ready-to-use binding, wash and elution buffers that are optimized for phosphopeptide enrichment and downstream analysis by MALDI- and ESI-based MS
- **Optimized for HTS** – procedure validated for processing 1 to 96 samples at a time; complete entire assay in about 15 minutes using a KingFisher Flex Instrument
- **Stable affinity ligand** – titanium dioxide is specially coated as a film onto the magnetic particles
- **Selective** – affinity system is selective for phosphorylated Ser, Tyr and Thr; exhibits minimal nonspecific binding to acidic residues
- **Sensitive** – affinity provides more than 1000 times greater sensitivity than traditional IMAC technologies; enables enrichment and MS measurement of less than 100 fmol of phosphoprotein



#### Ordering Information

Product #	Description	Pkg. Size
88811	<b>Pierce Magnetic Titanium Dioxide Phosphopeptide Enrichment Kit</b> Sufficient for: Purifying 96 x 100µg peptide samples Contains: $TiO_2$ Magnetic Beads (20X), 1mL Binding Buffer, 100mL Washing Buffer, 25mL Elution Buffer, 3mL Thermo-Fast 96 Robotic PCR Plates, 0.2mL wells, 2 plates	96-rxn kit
88812	<b>Pierce Magnetic Titanium Dioxide Phosphopeptide Enrichment Kit, Trial Size</b> Sufficient for: Purifying 24 x 100µg peptide samples Contains: $TiO_2$ Magnetic Beads (20X), 0.25mL Binding Buffer, 100mL Washing Buffer, 25mL Elution Buffer, 3mL Thermo-Fast 96 Robotic PCR Plates, 0.2mL wells, 2 plates	24-rxn kit

# more tools

to advance your assays

## Low-Throughput Magnetic Assays and Agarose Supports

In addition to high-performance Pierce Magnetic Beads, we offer tools for low-throughput magnetic assays and agarose supports for manual applications. These agarose supports are isolated with simple benchtop centrifuges and offer higher yields due to their increased size and binding capacity.



### Related Products

Product #	Description	Pkg. Size
<b>Bechtop Magnets</b>		
21357	MagnaBind™ Magnet for 1.5mL Microcentrifuge Tube	1 magnet
21358	MagnaBind Magnet for 96-Well Plate Separator	1 magnet
21359	MagnaBind Magnet for 6 Microcentrifuge Tubes	1 magnet
<b>Agarose Protein Coupling Beads</b>		
20381	AminoLink® Coupling Resin	10mL
20501	AminoLink Plus Coupling Resin	10mL
26200	Pierce NHS-Activated Agarose Slurry	25mL
20401	SulfoLink® Coupling Resin	10mL
88941	GlycoLink™ Immobilization Kit	10-column kit
20266	CarboxyLink™ Coupling Resin	25mL
<b>Agarose Immunoprecipitation/ Co-Immunoprecipitation Beads and Kits</b>		
20423	Pierce Protein A/G Plus Agarose	2mL
26146	Pierce Classic IP Kit	50-rxn kit
26147	Pierce Crosslink IP Kit	50-rxn kit
26148	Pierce Direct IP Kit	50-rxn kit
26149	Pierce Co-Immunoprecipitation Kit	50-rxn kit

### Related Products

Product #	Description	Pkg. Size
<b>Agarose and Ultralink Biotin Binding Resin</b>		
20347	Streptavidin Agarose Resin	2mL
20357	High Capacity Streptavidin Agarose Resin	2mL
53113	Pierce Streptavidin UltraLink® Resin	2mL
53116	Pierce Streptavidin Plus UltraLink Resin	2mL
<b>Agarose Protein Purification Resin</b>		
16100	Pierce Glutathione Agarose	10mL
88221	HisPur™ Ni-NTA Resin	10mL
89964	HisPur Cobalt Resin	10mL
<b>Agarose Phosphopeptide Enrichment</b>		
88301	Pierce TiO <sub>2</sub> Phosphopeptide Enrichment and Clean-up Kit	24-rxn kit
88303	Pierce TiO <sub>2</sub> Phosphopeptide Enrichment Spin Tips	96 tips
88300	Fe-NTA Phosphopeptide Enrichment Kit	30-column kit

need a larger quantity?

Visit [thermoscientific.com/protein-custom](http://thermoscientific.com/protein-custom) to request a quote or contact our Bulk and Custom Sales Department at [LVC.rockford@thermofisher.com](mailto:LVC.rockford@thermofisher.com)



# high-throughput magnetic bead handling

## Magnetic Bead Processors

**Our revolutionary proprietary magnetic separation technology** lets you process virtually any sample from any source for the ultimate in isolation of nucleic acids, proteins and cells. With four systems to choose from, Thermo Scientific KingFisher systems provides the performance, flexibility and speed for your budget, application and throughput requirements.



### KingFisher Flex

With high-throughput or processing volume of up to 5mL, the KingFisher Flex System offers truly versatile purification of nucleic acids and proteins. Process volumes from 20µL to 5000µL, depending on the magnet head, with

96- or 24-well format. Use predefined protocols or customize your own for special applications. The new KingFisher Flex System replaces the KingFisher 96 Instrument.

### KingFisher Duo

New to the KingFisher family, the KingFisher Duo System delivers advanced functionality in a compact, mid-throughput capacity instrument for isolation applications. Its small footprint and big functionality, including traceability and data management, make it a perfect fit for research and routine laboratories. Two protocols can run sequentially without interruption, raising throughput up to 24 samples per load. The KingFisher Duo System also includes large volume processing of up to 5mL.



### KingFisher mL

The economical choice for easy operation up to 15 samples. Processing volumes from 50µL to 1000µL carried out using tube strips.



### KingFisher

The first in the family, the KingFisher System allows you to economically purify small-scale samples. Run up to 24 samples of 20µL to 200µL. All purification and processing steps can be programmed using simple push-button operation and are carried out in microstrips.



### KingFisher Kits

With optimized Thermo Scientific KingFisher Purification Kits you can easily perform blood DNA, total RNA, cell and tissue DNA, viral NA, and plant DNA extraction. KingFisher Instruments, Software, Kits and Consumables deliver unparalleled performance.



For more information on Thermo Scientific KingFisher Systems, visit [thermoscientific.com/kingfisherinfo](http://thermoscientific.com/kingfisherinfo) or consult your local sales representative.

Instrument	Flex		Duo		mL	KF
Samples/run	96	24	12(24)	6	15	24
Working volume (µL)	20-1000	200-5000	30-1000	200-5000	50-1000	20-200

# quantitative biomarker analysis

## Mass Spectrometry Instruments and Software

### Mass Spectrometry Instrument and Software Solutions for Quantitative Proteomics

Successful proteomic analyses require optimum technology in all phases of the workflow, including effective sample preparation; robust, reproducible separations; accurate, sensitive data acquisition; and powerful data analysis.

We can provide complete liquid chromatography/mass spectrometry workflow solutions for a wide range of proteomic analyses, from qualitative discovery to quantitative discovery to targeted quantitative verification.

Thermo Scientific Tandem Mass Tag Technology and SILAC Kits enhance relative protein quantitation, while custom Thermo Scientific HeavyPeptide AQUA Standards provide for absolute protein quantitation. A wide range of Thermo Scientific Ion Trap, Orbitrap, and Triple Quadrupole Mass Spectrometers ensure exactly the right technology and level of performance is available for every proteomic application. Specialized Thermo Scientific Proteome Discoverer, SIEVE, ProSightPC, Pinpoint and other Software ensures as much high-quality data is acquired, and as much valuable information is extracted from that data, as possible.

### Thermo Scientific Orbitrap and Orbitrap Hybrid Mass Spectrometers

- Exactive® Plus MS
- Q Exactive Hybrid Quadrupole-Orbitrap MS
- LTQ® Orbitrap XL® Hybrid Ion Trap-Orbitrap MS
- Orbitrap Velos Pro Hybrid Ion Trap-Orbitrap MS
- Orbitrap Elite Hybrid Ion Trap-Orbitrap MS

**Orbitrap Velos Pro Hybrid  
Ion Trap-Orbitrap Mass Spectrometer**



### Thermo Scientific Ion Trap Mass Spectrometers

- LTQ XL Linear Ion Trap MS
- Velos Pro Dual-pressure Linear Ion Trap MS



**LTQ XL Linear Ion Trap-Orbitrap  
Mass Spectrometer**

### Thermo Scientific Triple Stage Quadrupole Mass Spectrometers

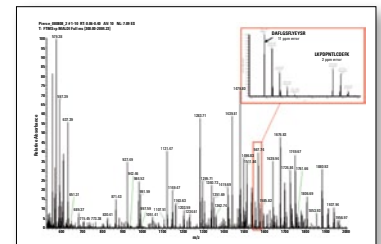
- TSQ Quantum® Access MAX Triple Stage Quadrupole MS
- TSQ Quantum Ultra Triple Stage Quadrupole MS
- TSQ Vantage® Triple Stage Quadrupole MS



**TSQ Quantum Access MAX Triple Stage  
Quadrupole Mass Spectrometer**

### Thermo Scientific Software

- Proteome Discoverer™ Software for proteomic data analysis
- SIEVE® Software for differential expression analysis
- ProSightPC Software for top-down protein analysis
- Pinpoint™ Software for quantitative proteomics
- Xcalibur® Instrument Control Software



For more information on these Thermo Scientific Mass Spectrometers, please visit [thermoscientific.com/ms](http://thermoscientific.com/ms).

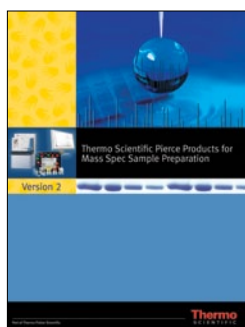
# your helping hands for protein research

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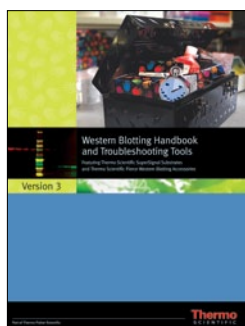
## Cell Lysis Technical Handbook

The Cell Lysis Technical Handbook describes the latest Thermo Scientific Cell Lysis products. Included are novel lysis products for neuronal cells and synaptosomes, subcellular protein fractionation kits from tissues, new protease and/or phosphatase inhibitor tablets, and universal nuclease to reduce sample viscosity.



## Mass Spec Sample Preparation Handbook

This updated handbook provides background, helpful hints and troubleshooting advice for cell lysis, sample preparation, detection, mass spectrometry sample preparation and downstream applications. The handbook features new products for protein concentration, purification and enrichment, plus the latest labeling techniques, including SILAC, TMT<sup>®</sup>, cystTMT<sup>™</sup> and HeavyPeptide<sup>™</sup> Reagents. The book also includes a section on Thermo Scientific Mass Spectrometry Instrumentation and Software. Everything you need to extract, digest, enrich, clean up and quantify proteins and peptides in one volume.



## Western Blotting Handbook and Troubleshooting Guide

The updated Western Blotting Handbook and Troubleshooting Guide (version 3) details each step of the Western blotting process with technical information and products for transfer, blocking, washing, antibodies, substrates, film and stripping buffer. You will want to keep this booklet close at hand because it also includes protocols, references and a troubleshooting guide.



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