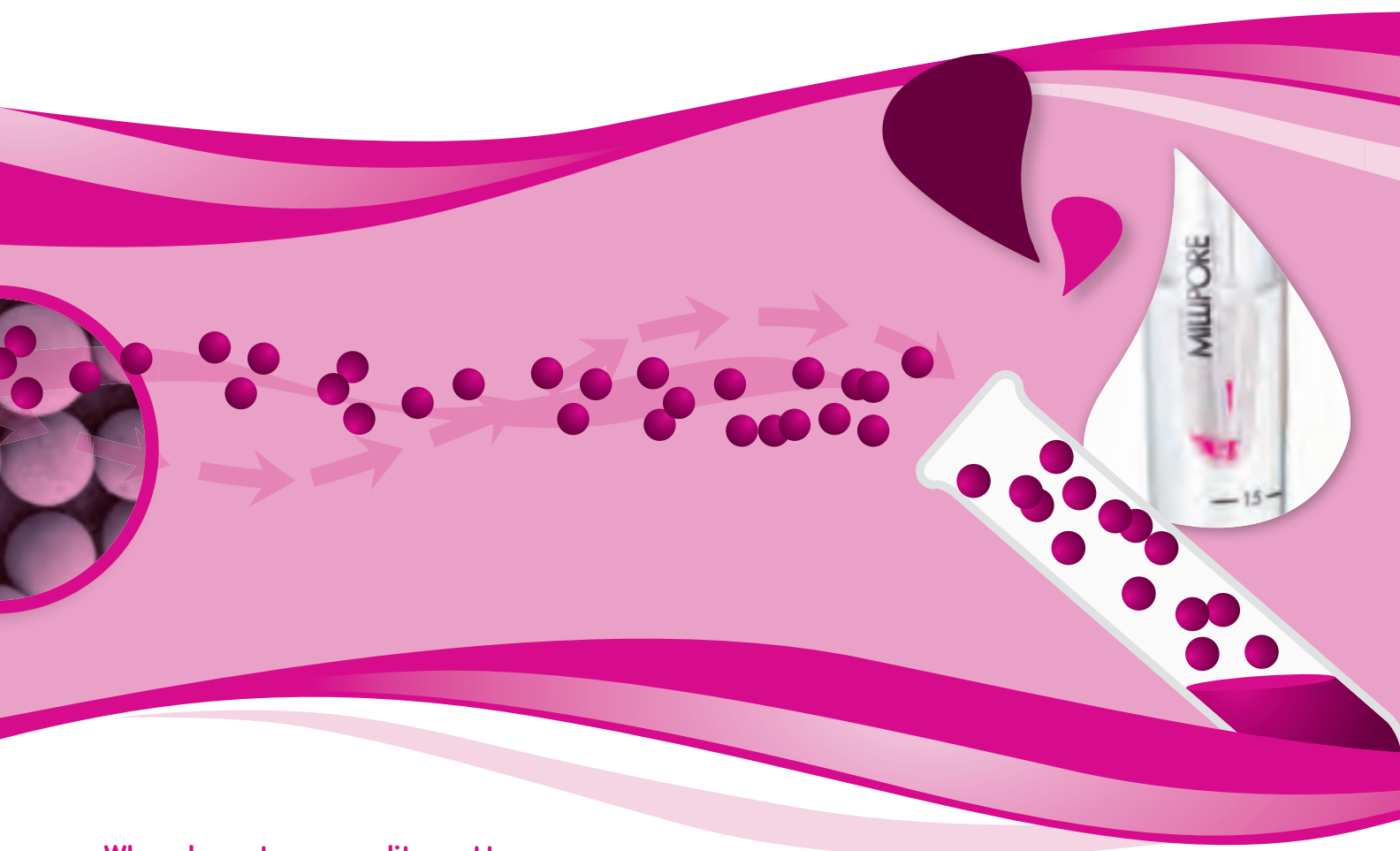




# Fast and Easy Protein Preparation

His-tag purification, immunoprecipitation and depletion  
Concentration, desalting and buffer exchange



When downstream quality matters,  
make sure your upstream tools are the best.

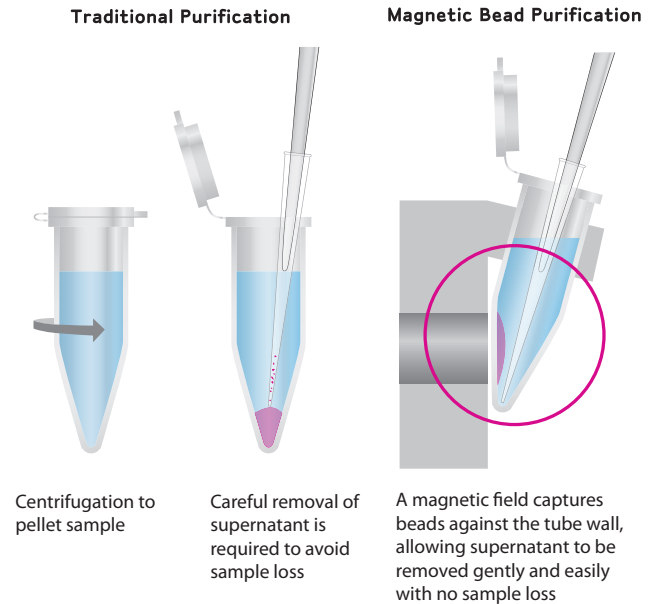
# Why Choose Magnetic Beads Instead of Agarose?

## Your challenge:

Conventional purification methods require centrifugation to pellet, followed by careful aspiration to avoid losing sample.

## Our solution:

PureProteome™ magnetic beads are isolated using a magnetic stand, enabling total removal of buffers and complete recovery of beads with no sample loss.



## Advantages of Magnetic Bead Systems:

### Achieve high purity

- Low non-specific binding of other proteins

### Obtain consistent results with no sample loss

- Total removal of buffers, complete recovery of beads
- Particles visible as they adhere to side of tube for quick and easy aspiration

### Save time with fast sample processing

- Magnetic field immobilizes beads in seconds
- Enhanced bead-protein binding enables shorter incubations

### Scale reactions to fit your experiment

- Adjust bead volume based on sample volume and total protein concentration



# Why Choose PureProteome Beads Over Other Magnetic Bead Systems?

**Trust Millipore** to develop a superior magnetic bead system optimized to advance your research. Compared to other magnetic purification systems, PureProteome beads have high binding capacity and are captured more efficiently by our unique magnetic stands.

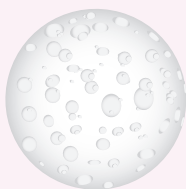


## Advantages of PureProteome Magnetic Beads:

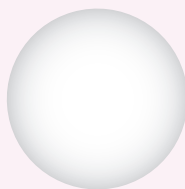
### High binding capacity

- Millipore's process for paramagnetizing porous silica particles produces magnetic beads with increased surface area, allowing more binding sites for proteins

PureProteome magnetic beads



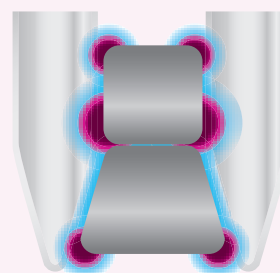
Non-Millipore magnetic beads



PureProteome beads have higher porosity therefore greater surface area; this accommodates more binding sites for proteins, giving you a high binding capacity.

### Efficient agitation, capture and sample handling

- Strong trapezoidal magnet fits tube contours perfectly
- Removable magnet and unique vortex interface enable thorough mixing (8-well stand)
- Ergonomic magnetic stand securely holds both 1.5 mL and 2 mL tubes (8-well stand)



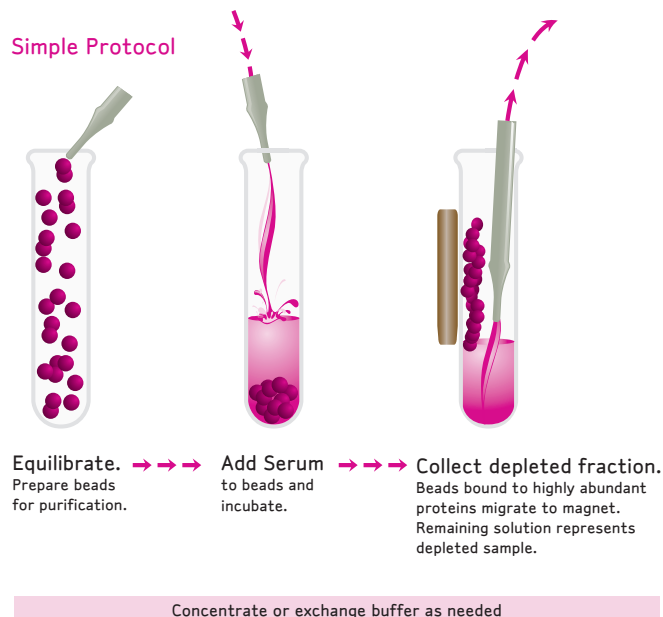
The PureProteome magnet stands feature an extra strong magnet which enables purification using high bead volumes. The placement of the trapezoid-shaped magnets fits tube contours perfectly and provides ample space for removing buffer without disturbing beads, ensuring efficient protein purifications.

# Fast and Easy Albumin Depletion

## Deplete with PureProteome Albumin or Albumin/IgG Magnetic Beads

Serum and plasma samples are rich sources of proteomic information, reflecting normal and diseased states. However, the wide concentration range of proteins present makes analyzing these samples difficult. The highly abundant proteins, albumin and immunoglobulin G (IgG), make up over 75% of the total serum/plasma protein, masking less abundant proteins of interest in analytical methods such as gel electrophoresis or mass spectrometry.

PureProteome magnetic beads provide a rapid, specific, scalable, and reproducible means to deplete > 98% of albumin and /or IgG from serum and plasma samples, so you can easily detect and analyze proteins of interest.



## Advantages of Depleting with PureProteome Magnetic Beads:

### High capacity

- >98% depletion of albumin and IgG from serum samples.

### Unique magnetic format

- Easy protocol, allows for purification with no manipulation of tubes or multipart assemblies.
- No centrifugation required with magnetic field immobilizing beads in seconds.

### Versatile depletion

- Remove just albumin or both albumin and IgG depending on your purification need.
- Scale to fit your experiment by adjusting bead volume based on sample volume and total protein concentration.



Kit contains: PureProteome Albumin/IgG magnetic beads, wash and bind buffer, and Amicon® Ultra centrifugal filters

## Ordering Information

Description	Type of Purification	Qty/Pk	Catalogue No.
PureProteome Albumin/IgG Depletion Kit <b>Includes:</b> <ul style="list-style-type: none"> <li>PureProteome Albumin/IgG beads, 12 mL</li> <li>10X Phosphate Buffered Saline (PBS) wash and bind buffer, 7 mL</li> <li>Amicon Ultra-4 3K Centrifugal Filter, 8pk</li> </ul>	>98% depletion of albumin and IgG from serum or plasma	1 kit	LSKMAGD12
PureProteome Albumin Magnetic Beads	>98% depletion of albumin from serum or plasma	10 mL	LSKMAGL10

## Efficient depletion... Greater enrichment of less abundant proteins.

Compare the black oval regions in the "before depletion" and "after depletion" 2-dimensional gels below, and you'll see that PureProteome magnetic beads effectively eliminate the massive albumin signal that's obscuring less abundant proteins that co-migrate with albumin.

### (A) Before depletion:

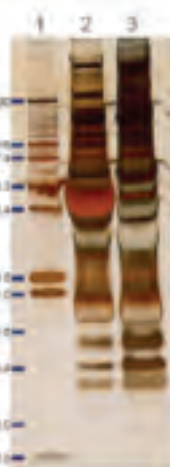


### (B) After depletion with PureProteome magnetic beads



Human serum (100 µg total protein) was analyzed before serum depletion (A), after depletion with PureProteome Albumin/IgG depletion kit (B). Serum proteins were resolved by isoelectric focusing (pH 4-7) in the first dimension and 8-16% SDS-PAGE in the second dimension and visualized with Coomassie blue staining.

### Selective Removal of Albumin

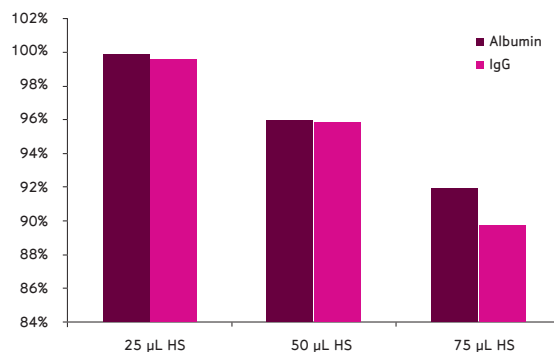


Removal of Human Serum Albumin (HSA) from Serum. Proteins were resolved on 4-12% SDS-PAGE gel and silver stained. Human serum (25 µL) was depleted of albumin following the protocol described for the PureProteome Albumin Magnetic Beads. Lane 1, molecular weight markers; lane 2, human serum (30 µg total protein); lane 3, human serum after depletion (30 µg total protein).

## Efficient depletion...Regardless of scale.

Adjust bead or sample volume depending on purification need.

**Albumin/IgG % depletion.** Increasing amounts of human serum (HS) were mixed with a fixed amount of Albumin/IgG depletion beads (950 µL of slurry or 170 µL of settled beads). The pre- and post-depleted samples were assayed by ELISA to calculate the percent depletion of both HSA and IgG.



# Fast and Easy Immunoprecipitation

## Purify With PureProteome Protein A or Protein G Beads

### Your challenge:

Traditional methods require hours of incubation time and minutes of harsh centrifugation to isolate sample.

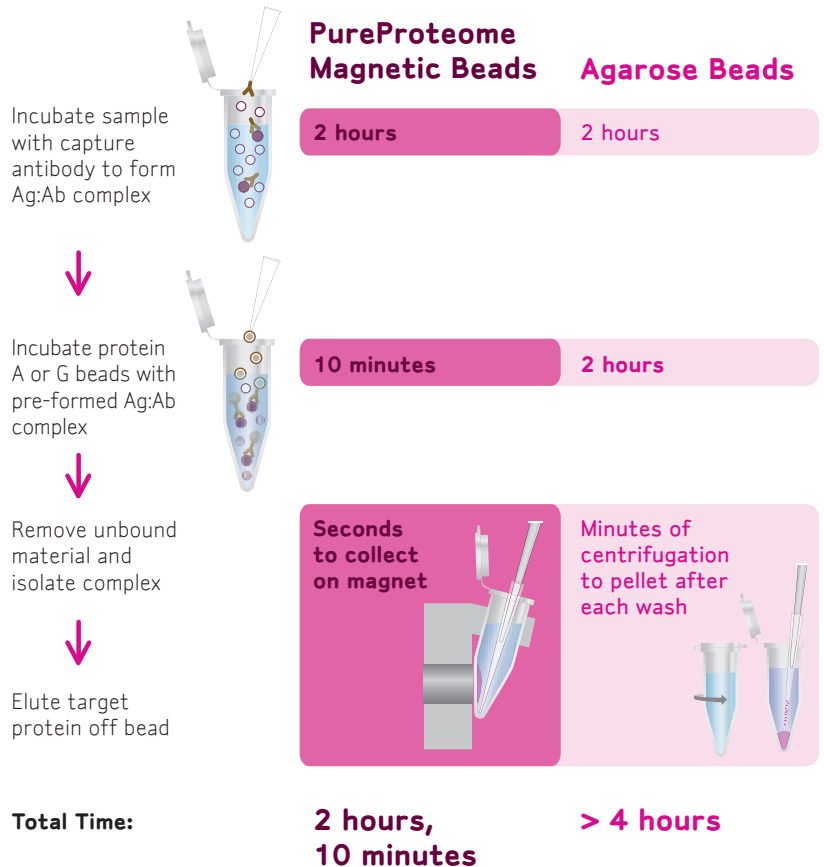
### Our solution:

#### Fast, gentle processing

PureProteome magnetic beads enhance binding equilibrium, enabling faster processing. The beads are easily resuspended for fast mixing and efficient interaction between the beads and protein.

**Dramatically reduce your sample preparation time with PureProteome magnetic beads.**

Watch a one-minute video demonstration at [www.millipore.com/beadView](http://www.millipore.com/beadView)



**High speed immunoprecipitation with magnetic beads compared to agarose.** In parallel indirect immunoprecipitations, PureProteome magnetic beads offered a 91% reduction in incubation time while yielding results equivalent to agarose beads.

## Advantages of PureProteome Protein A or Protein G Magnetic Beads:

### Be efficient with high capacity beads

- Increased surface area allows for significantly greater binding capacity than non-Millipore beads

### Achieve high purity

- Low non-specific binding of other proteins

### Save time with fast sample processing

- Enhanced binding equilibrium decreases incubation times by >90%



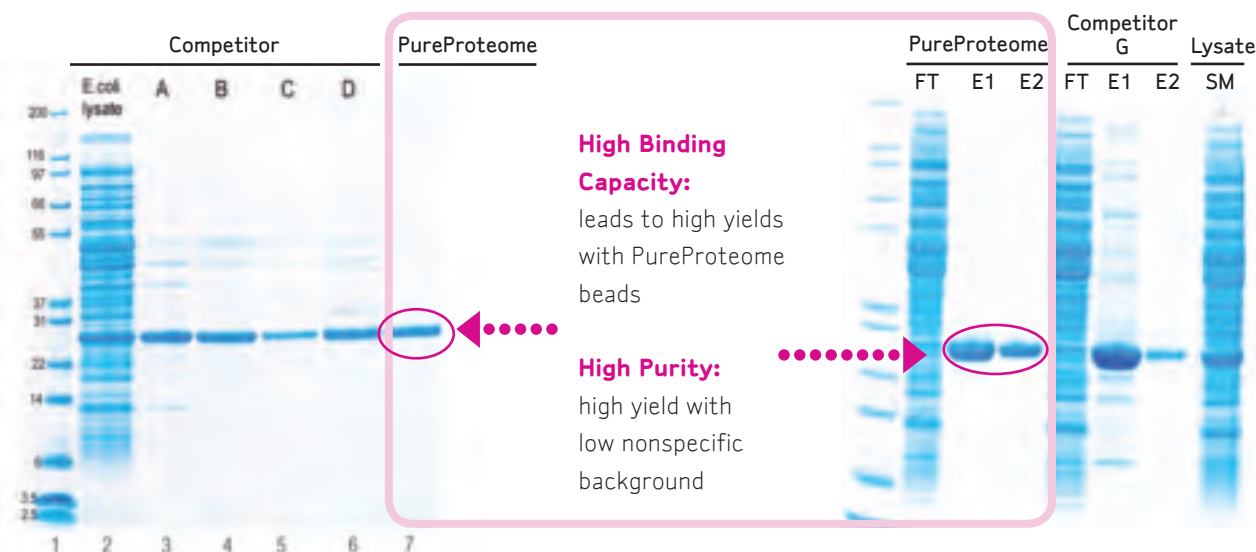


# Fast and Easy Histidine (His)-Tagged Protein Purification

## Purify with PureProteome Nickel Beads

PureProteome Beads vs. Other Magnetic Beads

PureProteome Beads vs. Agarose Beads



Polyhistidine-tagged 24 kDa protein purified from 1 mL *E. coli* culture with Millipore PureProteome beads (lane 7) and non-Millipore magnetic beads (lanes 3-6). Coomassie blue-stained SDS-PAGE gel also shows MW standards (lane 1) and starting lysate (lane 2).

**Purification of 6X-His-tagged C-RP expressed in *E. coli*.** 25  $\mu$ L of settled beads (PureProteome: 100  $\mu$ L 20% slurry; Competitor G: 40  $\mu$ L 50% slurry) were washed in 10 mL binding buffer, then incubated with 500  $\mu$ L *E. coli* lysate for 30 minutes at RT with end-over-end mixing. Beads were then washed three times with wash buffer containing 20 mM imidazole, then eluted with two fractions of 100  $\mu$ L elution buffer containing either 250 mM imidazole (PureProteome) or 500 mM imidazole (Competitor G). 10  $\mu$ L of each sample was loaded.

## Advantages of PureProteome Nickel Magnetic Beads:

### Be efficient with high capacity beads

- Bind 28 mg His-tagged protein/mL settled beads.

### High affinity beads give you peace of mind

- Proteins bind beads tightly in buffers containing EDTA.

### Achieve high purity

- Low binding of untagged proteins yields highly pure His-tagged proteins.

### High protein yield

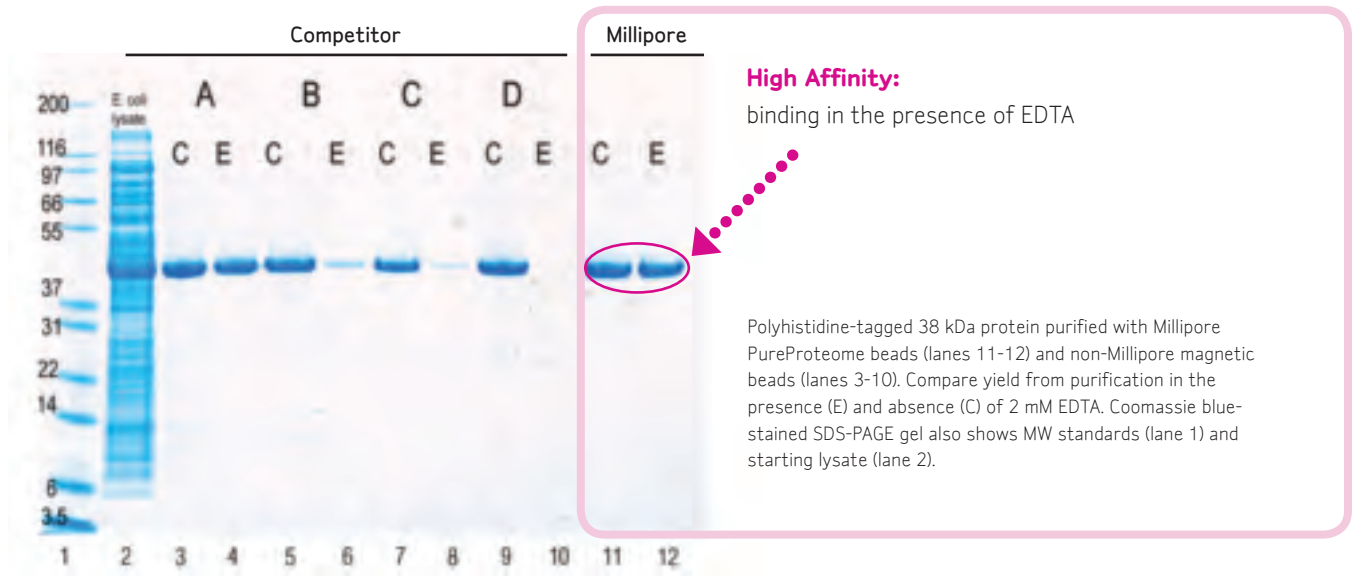
- Efficient elution and recovery of protein samples.

## Ordering Information

Description	Binding Capacity	Qty/Pk	Catalogue No.
PureProteome Nickel Magnetic Beads	5 mg His-tag protein/ mL suspension or 28 mg/mL settled beads	10 mL	LSKMAGH10
		2 x 1 mL	LSKMAGH02



# PureProteome Beads Outperform the Competition in His-tagged Protein Purification



## Maximize recovery and speed up tandem purification of a recombinant transcription factor

After initial affinity purification with PureProteome nickel magnetic bead system (Millipore), the solution of recombinant tandem-affinity-tagged transcription factor was divided in half and subjected to simultaneous concentration and buffer exchange with either an Amicon Ultra-15 filter or a non-Millipore centrifugal filter, to prepare the sample for subsequent calmodulin affinity purification. Samples of the retentates were analyzed by SDS-PAGE (shown).

**Compared to a non-Millipore Brand V centrifugal filter unit, the Amicon Ultra - 15 filter (10,000 MWCO) shows much higher protein yield in 2.5X less spin time, facilitating the subsequent calmodulin binding step.**



Lane 1: Brand V retentate after 5 x 60 minutes spin  
Lane 2: Millipore Amicon Ultra-15 filter retentate after 6 x 20 minutes spin

Acknowledgement: Data courtesy of IGBMC (Institute of Genetics and Molecular and Cellular Biology) – Strasbourg (France)

# Fast and Easy Concentration

## Concentrate with Amicon Ultra Filters

**Trust Millipore.** We're concentrating on your research. With decades of experience in developing innovative centrifugal filters, Millipore has perfected the art of sample concentration. Amicon Ultra centrifugal filters give you fast, effective concentration for the most sensitive downstream applications.

### Your challenge:

Speed up the concentration of large volumes while achieving high (75- to 80-fold) concentration factors and consistent final volumes.

### Our solution: Vertical design

With a vertical membrane inside Amicon Ultra filters, you minimize concentration polarization for ultra-fast spin times – usually 10 minutes.

With an engineered dead stop you recover consistent final volumes.



### Your challenge:

Maximize the consistent recovery of small volumes and minimize user impact during sample recovery.

### Our solution: Reverse spin

After concentrating your small volume sample in the Amicon Ultra-0.5 or 2 mL filter, turn the unit upside down and spin out your sample for consistent recovery without pipetting errors.



# Why Choose Amicon Ultra Filters?

## Advantages of Amicon Ultra Filters:

### Be efficient

- With 25- to 80-fold concentration in a single step

### Save time with ultra-fast sample processing

- Achieve concentration, desalting or buffer exchanges in as little as 10 minutes

### Be confident in a reliable device

- Spin precious samples with confidence in one robust, sleek unit that prevents any leakage

### Obtain consistent recoveries

- Reverse spin enables you to maximize recovery without introducing pipetting errors

### Peace of mind with an engineered dead stop that avoids spinning to dryness

- No loss
- No additional spin
- No need to calibrate for several samples run in parallel

### Keep using a broad range of chemicals

- Large spectrum of compatibility
- Heat-sealed membrane eliminates adhesives and downstream extractables
- Compatible with pH 1 to 9



### Recover >90% of your sample

- Low-binding membrane and polypropylene housing

### Handle sample with convenience

- Achieve final concentration with just a single spin

### Reduce waste and time, one device is enough

- Vertical design reduces polarization and avoids clogs

### Easy to use

- Standard design is compatible with all rotors

## Easy To Choose

What is the starting volume of your solution?

What is the **molecular weight** of your molecule of interest?

What is the final volume expected?

What is the concentration factor?

**Answer these questions, and you're ready to choose an Amicon Ultra filter with the right molecular weight cutoff (MWCO).**

Just use the tables below.

	Amicon Ultra-0.5 	Amicon Ultra-2 	Amicon Ultra-4 	Amicon Ultra-15 
<b>Starting Volume</b>	<0.5 mL	<2 mL	<4 mL	<15 mL

### Proteins

MOLECULAR WEIGHT (MW)	Amicon Ultra-0.5	Amicon Ultra-2	Amicon Ultra-4	Amicon Ultra-15
6<MW<20 k	3,000	3,000	3,000	3,000
20<MW<60 k	10,000	10,000	10,000	10,000
60<MW<100 k	30,000	30,000	30,000	30,000
100<MW<200 k	50,000	50,000	50,000	50,000
200 k<MW	100,000	100,000	100,000	100,000

### Single-Stranded and Double-Stranded Nucleic Acids

LENGTH	Amicon Ultra-0.5	Amicon Ultra-2	Amicon Ultra-4	Amicon Ultra-15
137-1159 bp	30,000	30,000	30,000	30,000

### Nanoparticles

PARTICLE DIAMETER (DIA)	Amicon Ultra-0.5	Amicon Ultra-2	Amicon Ultra-4	Amicon Ultra-15
1.5 < dia < 3 nm	3,000	3,000	3,000	3,000
3 < dia < 5 nm	10,000	10,000	10,000	10,000
5 < dia < 7 nm	30,000	30,000	30,000	30,000
7 < dia < 10 nm	50,000	50,000	50,000	50,000
10 nm < dia	100,000	100,000	100,000	100,000





**MWCO:** Molecular Weight Cut Off

10,000 MWCO centrifugal filter devices are CE marked for *in vitro* diagnostic use.

# Easy To Use

Once you've chosen the right Amicon Ultra filter for your needs, **choose your rotor, G force and spinning time** for concentrating your molecule. Designed as standard 1.5 mL, 15 mL conical, or 50 mL conical tubes, Amicon Ultra filters fit all standard rotor types.

**CHOOSE A ROTOR AND G FORCE**

	<b>Amicon Ultra-0.5</b> 	<b>Amicon Ultra-2</b> 	<b>Amicon Ultra-4</b> 	<b>Amicon Ultra-15</b> 
<b>Starting Volume</b>	<b>&lt;0.5 mL</b>	<b>&lt;2 mL</b>	<b>&lt;4 mL</b>	<b>&lt;15 mL</b>
Final Volume	15 - 20 µL	15 - 70 µL	50 µL	200 µL
Design of the Device	Standard 1.5 mL	Standard 15 mL	Standard 15 mL	Standard 50 mL
Fixed-Angle (35 °) Rotor	14,000 g 1,000 g reverse spin	7,500 g 1,000 g reverse spin	5,000 g for 100,000 7,500 g for all other MWCO	5,000 g
Swinging Bucket Rotor	N/A	4,000 g 1,000 g reverse spin	4,000 g	4,000 g

**CONCENTRATION FACTOR**

Final Volume	15 - 20 µL with reverse spin	15 - 70 µL with reverse spin	50 µL	200 µL
Concentration Factor	X25 - X30	X14 - X67	X80	X75

**ADJUST SPINNING TIME**

**For Proteins and Nanoparticles**

3,000	30 min.	60 min.	40 min.	40 min.
10,000	15 min.	40 min.	15 min.	20 min.
30,000	10 min.	20 min.	10 min.	20 min.
50,000	10 min.	15 min.	10 min.	15 min.
100,000	10 min.	30 min.	10 min.	15 min.

**Single-Stranded and Double-Stranded Nucleic Acids**

30,000	10 min.	15 min., fixed angle 40 min., swinging rotor	10 min., 5,000 g, fixed angle	10 min., 5,000 g, fixed angle
--------	---------	---	-------------------------------	-------------------------------

Visit [www.millipore.com](http://www.millipore.com) to check both Chemical Compatibility and Centrifuge/Rotor Compatibility of Amicon Ultra devices.

# When Downstream Quality Matters, Make Sure Your Upstream Tools Are the Best



## Ordering Information

### PureProteome Magnetic Beads

Description	Type of Purification	Binding Capacity	Qty/Pk	Catalogue No.
PureProteome Nickel Magnetic Beads	Histidine tag purification	5 mg His-tagged protein/ mL suspension	10 mL	LSKMAGH10
			2 x 1 mL	LSKMAGH02
PureProteome Protein A Magnetic Beads	Immunoprecipitation	1.5–2.5 µg rabbit IgG/µL suspension	10 mL	LSKMAGA10
			2 x 1 mL	LSKMAGA02
PureProteome Protein G Magnetic Beads	Immunoprecipitation	2.5–3.5 µg rabbit IgG/µL suspension	10 mL	LSKMAGG10
			2 x 1 mL	LSKMAGG02
PureProteome Magnetic Stand, 8 well	All	8 x 2 mL	1	LSKMAGS08
PureProteome Magnetic Stand, 15 mL	All	2 x 15 mL	1	LSKMAGS15

Description	Type of Purification	Qty/Pk	Catalogue No.
PureProteome Albumin/IgG Depletion Kit <b>Includes:</b> <ul style="list-style-type: none"> <li>○ PureProteome Albumin/IgG beads, 12 mL</li> <li>○ 10X Phosphate Buffered Saline (PBS) wash and bind buffer, 7 mL</li> <li>○ Amicon Ultra-4 3K Centrifugal Filter, 8pk</li> </ul>	>98% depletion of albumin and IgG from serum or plasma	1 kit	LSKMAGD12
PureProteome Albumin Magnetic Beads	>98% depletion of albumin from serum or plasma	10 mL	LSKMAGL10

**Best  
downstream  
results**

## Amicon Ultra Centrifugal Filters

	Product	Amicon Ultra-0.5	Amicon Ultra-2	Amicon Ultra-4	Amicon Ultra-15
	Maximum initial sample volume (mL)	0.5	2	4	15
	Final concentrate (retentate) volume (µL)	15 - 20	15 - 70	30 - 70	150 - 300
MWCO	Qty/Pk				
3,000 MWCO	8 24 96 500	UFC500308 UFC500324 UFC500396 UFC5003BK	UFC200324PL	UFC800308 UFC800324 UFC800396	UFC900308 UFC900324 UFC900396
10,000 MWCO	8 24 96 500	UFC501008 UFC501024 UFC501096 UFC5010BK	UFC201024PL	UFC801008 UFC801024 UFC801096	UFC901008 UFC901024 UFC901096
30,000 MWCO	8 24 96 500	UFC503008 UFC503024 UFC503096 UFC5030BK	UFC203024PL	UFC803008 UFC803024 UFC803096	UFC903008 UFC903024 UFC903096
50,000 MWCO	8 24 96 500	UFC505008 UFC505024 UFC505096 UFC5050BK	UFC205024PL	UFC805008 UFC805024 UFC805096	UFC905008 UFC905024 UFC905096
100,000 MWCO	8 24 96 500	UFC510008 UFC510024 UFC510096 UFC5100BK	UFC210024PL	UFC810008 UFC810024 UFC810096	UFC910008 UFC910024 UFC910096

## Spin filters for clarification, filtration, and sterilization

	Product	Ultrafree®-MC	Ultrafree-CL
	Maximum initial sample volume (mL)	0.5	2
	Hold-up volume (µL)	5	10
	Centrifugal Force	12,000	5,000
	Spin time	1 to 4 min.	1 to 4 min.
Pore Size (µm)	Qty/Pk		
0.1	25 100	UFC30VV25 UFC30VV00	UFC40VV25 UFC40VV00
0.22	25 100 250 5 x 10 sterile	UFC30GV25 UFC30GV00 UFC30GVNB UFC30GV0S	UFC40GV25 UFC40GV00  UFC40GV0S
0.45	25 100 250	UFC30HV25 UFC30HV00 UFC30HVN0	UFC40HV25 UFC40HV00
0.65	25 100 5 x 10 sterile	UFC30DV25 UFC30DV00 UFC30DV0S	UFC40DV25
5	100 / 25	UFC30SV00	UFC40SV25



For technical assistance, contact Millipore:  
**1-800-MILLIPORE (1-800-645-5476)**  
E-mail: [tech\\_service@millipore.com](mailto:tech_service@millipore.com)



In the United States:  
For customer service, call 1-800-766-7000.  
To fax an order, use 1-800-926-1166.  
To order online: [www.fishersci.com](http://www.fishersci.com)

In Canada:  
For customer service, call 1-800-234-7437.  
To fax an order, use 1-800-463-2996.  
To order online: [www.fishersci.ca](http://www.fishersci.ca)