

Dialysis or diafiltration?

D-Tube™ dialyzers, Amicon® Ultra, and Amicon® Pro filters give **YOU** the choice.

Each protein preparation is unique. Give it the special treatment it deserves with a perfectly designed device for buffer exchange, desalting, and removing solutes like urea and detergents. Select between fast and gentle dialysis using D-Tube™ dialyzers, diafiltration using the faster Amicon® Ultra centrifugal filters, or maximize protein activity with gentle, single spin diafiltration using the Amicon® Pro filter.

What's the difference?

Dialysis is the traditional method for desalting (removing microsolute) or buffer/solvent exchange, using osmotic pressure to drive solutes across a membrane.

Diafiltration, or ultrafiltration, achieves desalting or buffer exchange through the use of centrifugal force or other external pressure to drive small microsolute through a porous membrane. The membrane does not allow macrosolute (larger than the pore size) to pass through.



D-Tube™ dialyzers enable you to:

Complete dialysis in just 2–5 hours and prevent precipitation or over-concentration of sensitive samples.



Amicon® Ultra centrifugal filters enable you to:

Rapidly desalt or exchange buffers without diluting your sample—just concentrate the sample, discard filtrate, and reconstitute the concentrate with desired solvent.



Amicon® Pro device offers:

Ground-breaking, gentle, single-spin diafiltration for simultaneous buffer exchange with concentration.

Ask your sample what it needs.

Based on your sample preparation needs, use the chart below to determine whether dialysis or diafiltration is the best solution.

How to choose D-Tube™ dialyzers, Amicon® Ultra filters, and Amicon® Pro filters for dialysis & diafiltration

| Need | D-Tube™ Dialyzer | Amicon® Ultra | Amicon® Pro |
|---|--------------------------------|---|---|
| Faster access to sample | | X | X |
| Sensitive samples or samples which may precipitate at higher concentrations | X | | X |
| Robust samples able to be concentrated | | X | X |
| No concentration needed | X | | |
| Concentration needed | | X | X |
| Limited amounts of exchange solvent | | X | X |
| Sample needs to be kept cold | Cold temperature reduces speed | Minimal effect of cold temperature on speed | Minimal effect of cold temperature on speed |

Choose an Amicon® Ultra filter:

Simply use the tables below to first identify the best Molecular Weight Cut-Off (MWCO) for your sample and then select the filter that best suits your application based on starting and ideal final volume.

| Proteins | Nanoparticles | Single- and Double-Stranded Nucleic Acids | MWCO |
|------------------|---------------------|---|---------|
| 6 < MW < 20 k | 1.5 nm < dia < 3 nm | | 3,000 |
| 20 < MW < 60 k | 3 nm < dia < 5 nm | | 10,000 |
| 60 < MW < 100 k | 5 nm < dia < 7 nm | 137–1159 bp | 30,000 |
| 100 < MW < 200 k | 7 nm < dia < 10 nm | | 50,000 |
| 200 k < MW | 10 nm < dia | | 100,000 |

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 | UFC500308 | | UFC800308 | UFC900308 |
| | 24 | UFC500324 | UFC200324 | UFC800324 | UFC900324 |
| | 96 | UFC500396 | | UFC800396 | UFC900396 |
| | 500 | UFC5003BK | | | |
| 10,000 MWCO | 8 | UFC501008 | | UFC801008 | UFC901008 |
| | 24 | UFC501024 | UFC201024 | UFC801024 | UFC901024 |
| | 96 | UFC501096 | | UFC801096 | UFC901096 |
| | 500 | UFC5010BK | | | |
| 30,000 MWCO | 8 | UFC503008 | | UFC803008 | UFC903008 |
| | 24 | UFC503024 | UFC203024 | UFC803024 | UFC903024 |
| | 96 | UFC503096 | | UFC803096 | UFC903096 |
| | 500 | UFC5030BK | | | |
| 50,000 MWCO | 8 | UFC505008 | | UFC805008 | UFC905008 |
| | 24 | UFC505024 | UFC205024 | UFC805024 | UFC905024 |
| | 96 | UFC505096 | | UFC805096 | UFC905096 |
| | 500 | UFC5050BK | | | |
| 100,000 MWCO | 8 | UFC510008 | | UFC810008 | UFC910008 |
| | 24 | UFC510024 | UFC210024 | UFC810024 | UFC910024 |
| | 96 | UFC510096 | | UFC810096 | UFC910096 |
| | 500 | UFC5100BK | | | |

Amicon® Ultra filter selector tool

Find the right filter to prepare your sample—search with our online Amicon® Ultra Selector Tool.

Visit: www.merckmillipore.com/FastEasy



www.merckmillipore.com

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Choose a D-Tube™ dialyzer:

What is the starting volume of your solution? What is the molecular weight of your molecule of interest? Answer these questions, and you're ready to choose a D-Tube™ Dialyzer with the right molecular weight cut-off (MWCO)

| Product | D-Tube™ Mini | D-Tube™ Midi | D-Tube™ Maxi | D-Tube™ Mega | D-Tube™ Mega | D-Tube™ Mega |
|-------------------------------|---------------|--------------|----------------|--------------|--------------|--------------|
| Maximum initial sample volume | 10 to 250 µL | 50 to 800 µL | 100 µL to 3 mL | 3 to 10 mL | 10 to 15 mL | 15 to 20 mL |
| MWCO | Qty/Pk | | | | | |
| 3,500 | 10 | | 71506-3 | 71508-3 | 71739-3 | 71742-3 |
| | 50 | | | | 71739-4 | 71742-4 |
| 6,000–8,000 | 10 | 71504-3 | 71507-3 | 71509-3 | 71740-3 | 71743-3 |
| | 50 | | | | 71740-4 | 71743-4 |
| | 1 plate of 96 | 71712-3 | | | | |
| 12,000–14,000 | 10 | 71505-3 | | 71510-3 | | |
| | 1 plate of 96 | 71713-3 | | | | |
| Floating Rack | | | | | | |
| | 10 | 71512-3 | 71513-3 | 71514-3 | 71748-3 | 71748-3 |

Choose an Amicon® Pro device:

To choose the appropriate Amicon® Pro device, determine the molecular weight cut-off (MWCO) of your protein of interest.

| Product | MWCO | | | | |
|---------------------------------------|-----------|-----------|-----------|-----------|-----------|
| | 3,000 | 10,000 | 30,000 | 50,000 | 100,000 |
| Amicon® Pro Purification System 12/pk | ACS500312 | ACS501012 | ACS503012 | ACS505012 | ACS510012 |
| Amicon® Pro Purification System 24/pk | ACS500324 | ACS501024 | ACS503024 | ACS505024 | ACS510024 |

To place an order or receive technical assistance

In Europe, please call Customer Service:

France: 0825 045 645

Germany: 069 86798021

Italy: 848 845 645

Spain: 901 516 645 Option 1

Switzerland: 0848 645 645

United Kingdom: 0870 900 4645

For other countries across Europe, please call: +44 (0) 115 943 0840

Or visit: www.merckmillipore.com/offices

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