

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

## 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](http://www.merckmillipore.com/FastEasy)



[www.merckmillipore.com](http://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      |                |              |              | 71746-4      |
| 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](http://www.merckmillipore.com/offices)

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