

# 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)



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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	71745-3
						71745-4
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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