




Dialysis and Filtration Products

Product Selection Guide



Can you help me isolate my nucleic acid or protein sample?

Yes, it's easy!
No running in circles, quick to process,
user friendly D-Tube™ Dialyzers
and U-Tube™ Concentrators offer
efficient clean-up and concentration
of your samples!

That's what's in it for you. Merck Chemicals

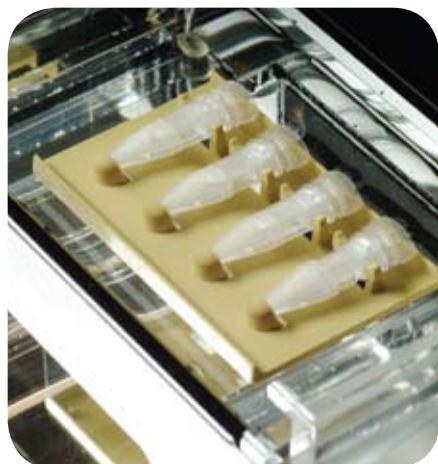
Key Features

Convenience	Easy-to-use, one-step process to remove unwanted contaminants or buffer
Yield	Recovery of sample ranges from 95-98% through dialysis or concentration
Flexibility	D-Tube™ Dialyzers and U-Tube™ Concentrators are used in desalting, buffer exchange, electroelution, removal of contaminants, protein concentration and other applications.



D-Tube™ Dialyzers

D-Tube™ Dialyzers are easy-to-handle dialyzers in a capped centrifuge tube format with dialysis membrane windows for buffer exchange and removal of solutes like urea or detergents while providing > 97% sample volume recovery from solution. The disposable, single-use tubes require no syringes, centrifuge, or laborious steps to manipulate small sample volumes. The sample is added and removed using a standard laboratory pipet. D-Tube™ Dialyzers are available with molecular weight cut-offs from 3.5 to 14 kDa and are designed with six volume capacities: mini (10–250 µl), midi (50–800 µl), maxi (100–3000 µl), and mega (10, 15, and 20 ml). The membrane is ultra-clean, EDTA-treated regenerated cellulose, sulfur- and heavy metal-free. Each kit contains 10 D-Tube™ Dialyzers (Mega kits available in 10 and 50 pk) and one floating rack that can hold up devices in an exchange buffer.



Electroelution Kit (Cat. No. 71511-3)

Following separation of biomolecules by agarose or polyacrylamide gel electrophoresis, electroelution using D-Tube™ Dialyzers offers a means to extract the sample of interest by applying an electric current to the excised gel band.

- Extraction ▶ Remove any protein, protein-protein complex, protein-DNA complex, oligonucleotides, RNA and DNA from polyacrylamide or agarose gel
- Recovery ▶ 90% nucleic acid recovery from agarose or polyacrylamide, and 60% protein recovery from polyacrylamide
- Compatibility ▶ Recovered sample can be used in MALDI-MS functional assays, HPLC, peptide mapping, and animal immunization for antibody production
- Components ▶ Three supporting trays that fit most horizontal electrophoresis units and optimized precipitation reagents for nucleic acids and proteins following elution

Minimum electroelution times to extract samples from polyacrylamide and agarose gels

POLYACRYLAMIDE GELS								AGAROSE GELS	
Protein		DNA		RNA		Oligos		DNA	
Protein Size (kDa)	Elution Time* (min)	DNA Fragment Size (bp)	Elution Time† (min)	RNA Fragment Size (nt)	Elution Time‡ (min)	Oligonucleotide Size (nt)	Elution Time‡ (min)	DNA Fragment Size (bp)	Elution Time‡ (min)
14	35–45	100	10–20	100	15–25	15–100	10–20	100–200	10–20
19–26	45–55	300	15–25	400	25–35			500–700	15–20
29	55–65	500	20–30	600	35–45			1000	20–30
40	60–70	822	25–35	1000	45–55			4361	25–35
45	65–75	1044	30–40					6557	45–55
50	75–85	2700	45–55					9416	55–65
66	85–95								
81	105–115								
116	120–130								
128	140–150								

Note: electroelution times shown in this table are for D-Tube™ Midi; optimum times depend on the sample contents. For each D-Tube Midi, the gel piece should not exceed 0.5 cm × 1 cm. Additional information about optimum electroelution times for D-Tube™ Mini and Maxi varieties is available in TB422 at www.merck4biosciences.com

*Minimum time recommended for elution of protein from a 10% SDS-polyacrylamide gel at 100 V

† Minimum time recommended for elution of DNA or RNA fragments from a native or denaturing 4% polyacrylamide gel at 100–150 V

‡ Minimum time recommended for elution of DNA fragments from a 1% agarose gel at 80–110 V

U-Tube™ Concentrators

U-Tube™ Concentrators* are ultra-filtration spin concentrators for use with most biological samples, including protein or nucleic acid solutions. The devices feature a vertical membrane design which limits membrane fouling. An integrated dead-stop-volume minimizes the risk of concentrating to dryness. U-Tube™ Concentrators are available with a low protein binding polyethersulfone (PES) membrane in a variety of volumes and molecular weight cut-offs. Select U-Tube™ Concentrators featuring ultra-low protein binding Hydrosart® membranes, for use when quantitative sample recovery is required. In a single spin of 10 to 30 min, samples can be concentrated 30 to 100-fold with recoveries greater than 95%.



Centrifuge Rotor Requirements

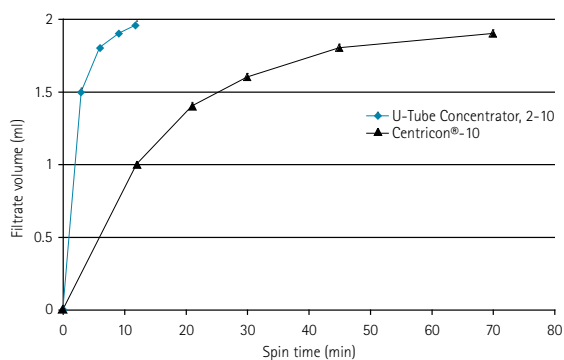
U-Tube™ Concentrator 500-3, 500-10, and 500-30.	Fixed angle centrifuge (40° minimum) to fit 2.2 ml (11 mm) conical bottom tubes.
U-Tube™ Concentrators 2H-2, 2-10, 2-30, 6-3, 6-10, and 6-30.	Swinging bucket or fixed angle rotor (25° minimum) to fit 15 ml (17 mm) conical bottom tubes.
U-Tube™ Concentrators 15H-5, 15H-30, 20-3, 20-10, and 20-30.	Swinging bucket or fixed angle rotor (25° minimum) to fit 50 ml (30 mm) conical bottom tubes.

Applications

- Concentration of cell culture supernatant, samples containing unbound antibody, samples for chromatography and electrophoresis
- Desalting and buffer exchange
- Protein removal before reverse phase HPLC
- Removal of low or high MW contaminants and unincorporated label removal
- Protein in polyacrylamide gel slice

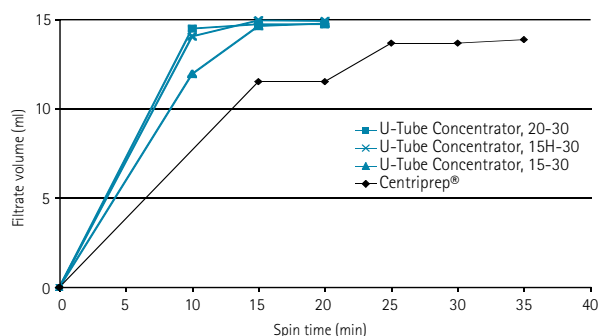
U-Tube™ Concentrators 2-10

- 10 kDa membrane, 2 ml Sample Volume
- 1.0 mg/ml BSA (66.4 kDa) in 0.15 M NaCl
- 5,000 x g in 25° fixed angle centrifuge



U-Tube™ Concentrators 15-30, 15H-30, 20-30

- 30 kDa MWCO
- 1.0 mg/ml BSA (66.4 kDa)
- 3,000 x g* in swing out rotor



*Centriprep run at published max RCF 1,500 xg

*Manufactured by Sartorius Stedim.
Protected under US Patent 5,647,990.



Maximum Recovery



D-Tube™ Dialyzers

Product	Volume	Size	MWCO (kDa)	Cat No.
D-Tube™ Mini	10 to 250 µl	10 tubes	6 - 8	71504-3
			12 - 14	71505-3
D-Tube™ Midi	50 to 800 µl	10 tubes	3.5	71506-3
			6 - 8	71507-3
D-Tube™ Maxi	100 to 3000 µl	10 tubes	3.5	71508-3
			6 - 8	71509-3
			12 - 14	71510-3
D-Tube™ Mega	3 to 10 ml	10 tubes	3.5	71739-3
		50 tubes	3.5	71739-4
		10 tubes	6 - 8	71740-3
		50 tubes	6 - 8	71740-4
D-Tube™ Mega	10 to 15 ml	10 tubes	3.5	71742-3
		50 tubes	3.5	71742-4
		10 tubes	6 - 8	71743-3
		50 tubes	6 - 8	71743-4
D-Tube™ Mega	15 to 20 ml	10 tubes	3.5	71745-3
		50 tubes	3.5	71745-4
		10 tubes	6 - 8	71746-3
		50 tubes	6 - 8	71746-4
D-Tube96™	10 to 250 µl	1 plate	6 - 8	71712-3
			12 - 14	71713-3
Floating Rack, Mini		10 racks		71512-3
Floating Rack, Midi		10 racks		71513-3
Floating Rack, Maxi		10 racks		71514-3
Floating Rack, Mega		10 racks		71748-3



For additional information on the D-Tube™ Dialyzers product line, visit our website www.merck4biosciences.com/dtube

Maximum Convenience



U-Tube™ Concentrators

Product	Capacity (ml)		Size	MWCO (kDa)	Membrane	Cat No.
	Fixed	Swinging				
U-Tube™ 500-3	0.5	N/A	10 U-Tubes™	3	PES	71872-3
			25 U-Tubes™			71872-4
U-Tube™ 500-10	0.5	N/A	10 U-Tubes™	10	PES	71873-3
			25 U-Tubes™			71873-4
U-Tube™ 500-30	0.5	N/A	10 U-Tubes™	30	PES	71874-3
			25 U-Tubes™			71874-4
U-Tube™ 2H-2	2	3	10 U-Tubes™	2	Hydrosart®	71875-3
			25 U-Tubes™			71875-4
U-Tube™ 2-10	2	3	10 U-Tubes™	10	PES	71876-3
			25 U-Tubes™			71876-4
U-Tube™ 2-30	2	3	10 U-Tubes™	30	PES	71877-3
			25 U-Tubes™			71877-4
U-Tube™ 6-3	6	6	10 U-Tubes™	10	PES	71878-3
			25 U-Tubes™			71878-4
U-Tube™ 6-10	6	6	10 U-Tubes™	10	PES	71879-3
			25 U-Tubes™			71879-4
U-Tube™ 6-30	6	6	10 U-Tubes™	30	PES	71880-3
			25 U-Tubes™			71880-4
U-Tube™ 15H-5	15	15	10 U-Tubes™	5	Hydrosart®	71881-3
			25 U-Tubes™			71881-4
U-Tube™ 15H-30	15	15	10 U-Tubes™	30	Hydrosart®	71882-3
			25 U-Tubes™			71882-4
U-Tube™ 20-3	20	20	10 U-Tubes™	3	PES	71883-3
			25 U-Tubes™			71883-4
U-Tube™ 20-10	20	20	10 U-Tubes™	10	PES	71884-3
			25 U-Tubes™			71884-4
U-Tube™ 20-30	20	20	10 U-Tubes™	30	PES	71885-3
			25 U-Tubes™			71885-4



For additional information on the U-Tube™ Concentrators product line, visit our website www.merck4biosciences.com/utube

Please contact us to request a free sample.

For more information, or to order Novagen® products:
Visit our website www.merck4biosciences.com

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Denmark	00800 1166 8811	00800 1166 8811	00800 1166 8822
Finland	00800 1166 8811	00800 1166 8811	00800 1166 8822
France	0800 699 620	0800 126 461	0800 348 630
Germany	0800 6931 000	0800 100 3496	0800 6236 100
Ireland	1800 409 445	1800 409 445	+44 (0)115 943 0951
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Luxembourg	00800 1166 8811	00800 1166 8811	00800 1166 8822
Netherlands	0800 022 7203	0800 022 7203	00800 1166 8822
Norway	00800 1166 8811	00800 1166 8811	00800 1166 8822
Portugal	00800 1166 8811	00800 1166 8811	00800 1166 8822
Spain	00800 1166 8811	00800 1166 8811	00800 1166 8822
Sweden	020 796 110	020 796 110	00800 1166 8822
Switzerland	0800 561 470	0800 561 470	00800 1166 8822

Mobile phone access to freephone numbers may be limited in some countries
- please use alternative number: +44 (0) 115 943 0840

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