Slide-A-Lyzer™ MINI Dialysis Devices

Catalog Numbers 88400, 88401, 88402, 88403, 88404, 88405

Doc. Part No. 2162292 Pub. No. MAN0011740 Rev. B.0

WARNING! Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from thermofisher.com/support.

Product description

The Slide-A-Lyzer™ MINI Dialysis Devices enable rapid and efficient dialysis of 50–500 µL or 200–2,000 µL samples directly in the supplied 15-mL or 50-mL conical tubes. These single-use devices require no centrifuge, beakers, or multiple laborious steps to perform. Futhermore, sample addition and removal are easily accomplished using standard laboratory pipettes, eliminating the need for syringes. The Slide-A-Lyzer™ MINI Dialysis Devices have a regenerated cellulose membrane, which is compatible with common chemicals and buffers. These devices can be used to simultaneously process multiple samples while minimizing the amount of dialysis buffer required and generating less waste than conventional dialysis.

Contents and storage

Size	Amount	Membrane Molecular Weight Cut-Off			Storage
		3.5K MWCO	10K MWCO	20K MWCO	
0.5 mL[1]	25 each	88400	88401	88402	Room temperature
2 mL[2]		88403	88404	88405	

[1] Supplied with 15 mL conical tube.
[2] Supplied with 50 mL conical tube.

Workflow

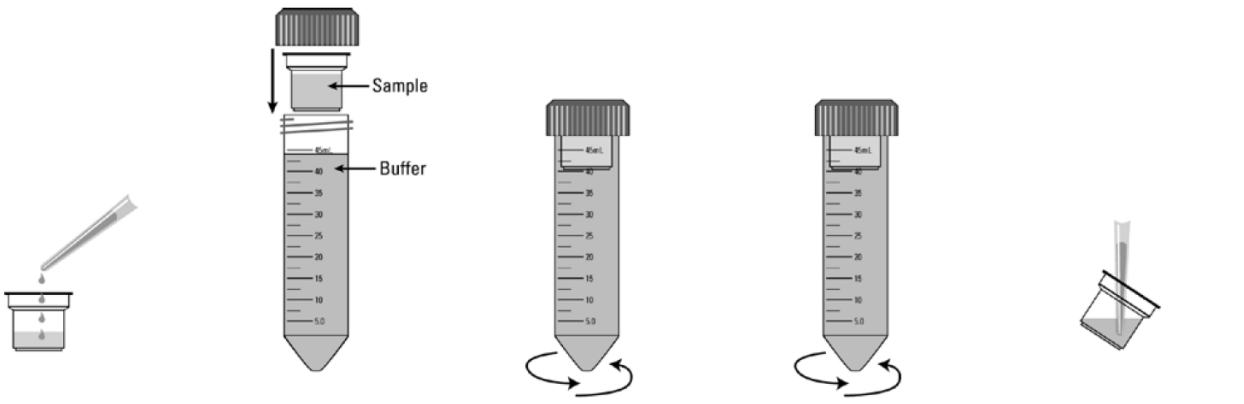

Figure 1 Procedure summary for the Slide-A-Lyzer™ MINI Dialysis Devices.

Important product information

- To prevent contamination, do not touch the membrane with ungloved hands.
- Avoid contact with the membrane.
- Once wet, do not let the membrane become dry.
- For dialysis, gently agitate the device on an orbital shaker.
- Determine the appropriate sample volume. If the sample density is ≥1.150 g/mL, such as protein in saturated 4.1 M $(NH_4)_2SO_4$, 45% sucrose, or 8 M GuHCl, use ≤50% of the maximum sample volume indicated for the specific device, which allows for the influx of water during dialysis and ensures the device does not fill over the 2 mL maximum. Performing serial dialysis using buffers with decreasing concentrations of solutes (salt) prevents osmotic pressure from overfilling the device (e.g., dialyze a 5 M NaCl sample against a buffer with 0.5 M NaCl).

Required materials not supplied

- *(Optional)* Orbital shaker
- Pipette for sample recovery

Dialyze samples using the dialysis devices

Note: Despite stringent quality assurance standards, device leakage can occur. To ensure device integrity before dialyzing valuable samples, check for leaks by loading ultrapure water and observing for several minutes. If droplets form across the membrane, then do not use the device. Perform device manipulations over a clean, dry work surface.

1. Remove the Slide-A-Lyzer™ MINI Dialysis Devices from the conical tube. To prevent membrane contamination, use gloves and handle the device only on the sides.
2. Add dialysis buffer to the conical tube and set aside (approximately 14 mL for the 0.5 mL device or approximately 44.5 mL for the 2 mL device).
3. Add buffer into the device (1 mL for the 0.5 mL device or 4 mL for the 2 mL device). Decant the buffer and shake the device to remove buffer. Do not let the membrane become dry.
4. Immediately add sample into the device (50–500 µL for the 0.5 mL device and 0.2–2 mL for the 2 mL device).
5. Place the device slowly into the conical tube containing the buffer. Ensure that the membrane is in contact with the buffer and does not introduce any air bubbles.
6. Cap the conical tube securely and shake gently on an orbital shaker (i.e., 100–300 rpm).
7. Dialyze for a time sufficient to remove low-molecular weight compounds for the specific downstream application. The rate of dialysis is affected by many factors including sample volume, size, and shape of the molecule being dialyzed, and dialysis agitation and temperature. A typical dialysis procedure is:
   a. Dialyze for 2 hours at room temperature (RT) or 4°C.
   b. Change the dialysis buffer and dialyze for another 2 hours to overnight (see Figure 2 and Figure 3).

   Note: Dialysis times can be shorter when using less than maximum sample volumes.
8. Remove the device from the conical tube and collect the sample from the corner of the device using a pipette.

Troubleshooting

Observation	Possible cause	Recommended action
Sample leaked from the device	The membrane was compromised.	Before loading the sample, test the membrane using ultrapure water.
Small molecule is not removed completely	Buffer was not changed.	Dialyze for 2 hours at RT or 4°C; change the dialysis buffer and dialyze for another 2 hours; change the dialysis buffer and dialyze overnight.
Moisture seen on cap	Condensation or splashing caused by over agitation.	Reduce agitation rate (shaker rpm).

Additional information

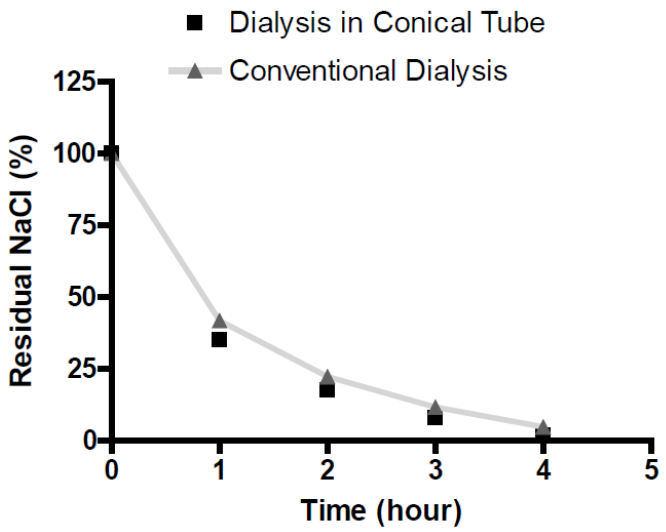

Figure 2 Rate of removal of NaCl in a Slide-A-Lyzer™ MINI Dialysis Device, 10K MWCO, 2 mL.
Samples (2 mL, 0.25 mg/mL BSA containing 1 M NaCl) were dialyzed against 45 mL of water in 50 mL disposable conical tubes on an orbital shaker (300 rpm) at RT. The rate of removal of NaCl was determined by measuring the conductivity of the retentate at the indicated times. Greater than 95% of NaCl was removed within 4 hours.

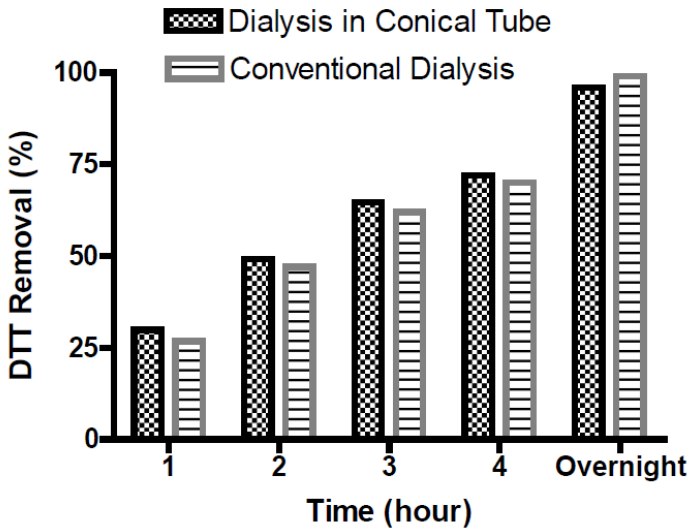

Figure 3 Rate of removal of DTT in a Slide-A-Lyzer™ MINI Dialysis Device, 10K MWCO, 2 mL.
Samples (2 mL, 100 mM DTT in 50 mM sodium phosphate, 75 mM NaCl, pH 7.2) were dialyzed against 45 mL of 50 mM sodium phosphate, 75 mM NaCl, pH 7.2 in 50 mL disposable conical tubes on an orbital shaker (300 rpm) at RT. The rate of removal of DTT was determined using Ellman's Reagent at 412 nm at the indicated times. Overnight dialysis resulted in >95% of DTT removal.

Note: The buffer was changed after 2 hours in all experiments. Similar results were obtained with 0.5 mL Slide-A-Lyzer™ MINI Dialysis Devices. For conventional dialysis, the samples were dialyzed against 2 L of buffer in a beaker with stirring.

Table 1 Slide-A-Lyzer™ membrane chemical compatibility.

Reagent	Compatibility[1]	Reagent	Compatibility[1]
Acetic acid, 25%	G	Hydrofluoric acid, 25%	F
Acetone	G	Hydrogen peroxide, 30%	G
Ammonium hydroxide (1 N)	F	Isopropanol	G
Ammonium hydroxide, 25%	F	Methanol, 98%	G
Amyl acetate	G	Methyl acetate	G
Benzene	N	Methyl ethyl ketone	G
Benzyl alcohol	N	Methylene chloride	G
Butanol	G	Nitric acid, 25%	N
Butyl acetate	G	Nitric acid, 65%	N
Carbon tetrachloride	G	Perchloric acid, 25%	N
Chloroform	N	Phosphoric acid, 25%	F
Dimethyl formamide	F	Potassium hydroxide (1 N)	N
Dioxane	G	Propylene glycol	G
Ethanol, 70%	G	Sodium hydroxide (1 N)	F
Ethanol, 95%	G	Sulfuric acid, 25%	F
Ethyl acetate	G	Sulfuric acid, 96%	N
Ethylene glycol	G	Tetrahydrofuran	G
Formaldehyde solution, 30%	G	Toluene	G
Formic acid, 25%	G	Trichloroacetic acid, 10%	F
Formic acid, 100%	G	Trichloroacetic acid, 25%	N
Hexane	G	Xylene	F
Hydrochloric acid, 25%	N	Trichloroethylene	N
Hydrochloric acid, 30%	N	—	

[1] G: Good chemical resistance
F: Fair chemical resistance (pore swelling can occur)
N: Not recommended

For more information and protein dialysis, desalting, and concentration support, go to:

thermofisher.com/us/en/home/technical-resources/technical-reference-library/protein-purification-isolation-support-center/protein-dialysis-desalting-concentration-support

Related products

- Slide-A-Lyzer™ G3 Dialysis Cassettes (**thermofisher.com/us/en/home/life-science/protein-biology/protein-purification-isolation/protein-dialysis-desalting-concentration/dialysis-products/slide-a-lyzer-dialysis-cassettes**)
- Slide-A-Lyzer™ Cassettes, Mini Devices, and Flasks (**thermofisher.com/us/en/home/life-science/protein-biology/protein-purification-isolation/protein-dialysis-desalting-concentration/dialysis-products**)
- Pierce™ Protein Concentrators (**thermofisher.com/us/en/home/life-science/protein-biology/protein-purification-isolation/protein-dialysis-desalting-concentration/protein-concentrators**)
- Protease and Phosphatase Inhibitor Cocktails and Tablets (**thermofisher.com/search/browse/category/us/en/90223020**)

- Pierce™ Microdialysis Plates (thermofisher.com/us/en/home/life-science/protein-biology/protein-purification-isolation/protein-dialysis-desalting-concentration/dialysis-products/microdialysis)

Product	Cat. No.	Unit size
Slide-A-Lyzer™ MINI Dialysis Unit, 2K MWCO	69580	50 each
Slide-A-Lyzer™ MINI Dialysis Unit, 3.5K MWCO	69550	50 each
Slide-A-Lyzer™ MINI Dialysis Unit, 7K MWCO	69560	50 each
Slide-A-Lyzer™ MINI Dialysis Unit, 10K MWCO	69570	50 each
Slide-A-Lyzer™ MINI Dialysis Unit, 20K MWCO	69590	50 each
BupH™ Phosphate Buffered Saline Packs	28372	40 packs
BupH™ Tris Buffered Saline Packs	28376	40 packs

Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale at www.thermofisher.com/us/en/home/global/terms-and-conditions.html. If you have any questions, please contact Life Technologies at www.thermofisher.com/support.

Thermo Fisher Scientific | 3747 N. Meridian Road | Rockford, Illinois 61101 USA
For descriptions of symbols on product labels or product documents, go to thermofisher.com/symbols-definition.

Revision history: Pub. No. MAN0011740 B.0

Revision	Date	Description
B.0	22 March 2023	The format and content were updated.
A.0	17 October 2015	New document for the Slide-A-Lyzer™ MINI Dialysis Devices.