

Technical Bulletin #A0110: Sample Filtration using Well-plates

Overview and Objective

Protasis instrumentation employs standard laboratory sample formats, specifically microvials, and 96- and 384-well plates. We recommend good laboratory practice and sample management protocols that are already widely accepted in chromatography, mass spectrometry, and other analytical instrument platforms that employ capillary-scale microflow systems and technologies. These protocols specify the use of particulate-free samples that have been filtered and/or purified prior to analysis. This Technical Bulletin describes our recommended method of sample filtration to produce 96 well-plates for analysis (Note that the hold-up volume of solvent on the membrane filter is typically 10-15 μL depending upon solvent used). A companion Technical Bulletin (#A0100) describes our method of filtration for microvial-based samples. Both Bulletins are available for download in electronic format from the Knowledge Base of the Protasis technical support website, www.microNMR.com. All prices were current in July 2006.

Well-Plate Filtration

Recommended Parts and Apparatus

1) Filtration Plate

- 96 well-plate filter, nylon, 0.45 μm , 350 μL
- Product No. F96-2045-350
- Cost: Pack of 5 for \$37.18
- Depending upon your application, filtration media are also available in PP, PS and PVDF
- Distributor: MicroLiter Analytical Supplies at 1-888-232-7840

2) Standard 96 well-plate and cover such as

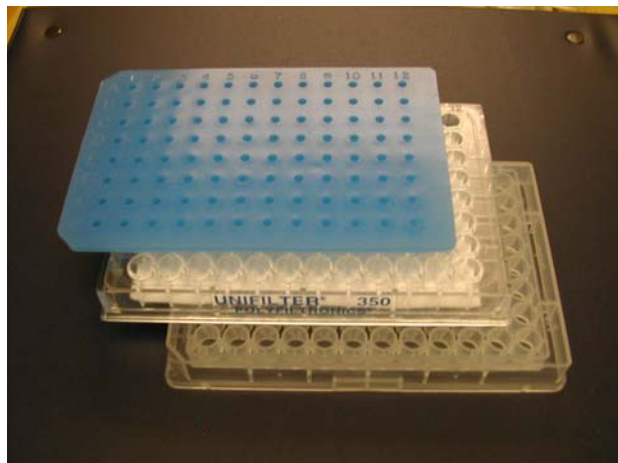
- 350 μL shallow, round well/conical bottom PP well-plate with piercible cover
- Product No. 07-1211N
- Cost: \$9.20 per set
- Distributor: MicroLiter Analytical Supplies at 1-888-232-7840

3) Centrifuge that is compatible with well-plates. For instance, see options from Savant centrifugation products at www.thermo.com

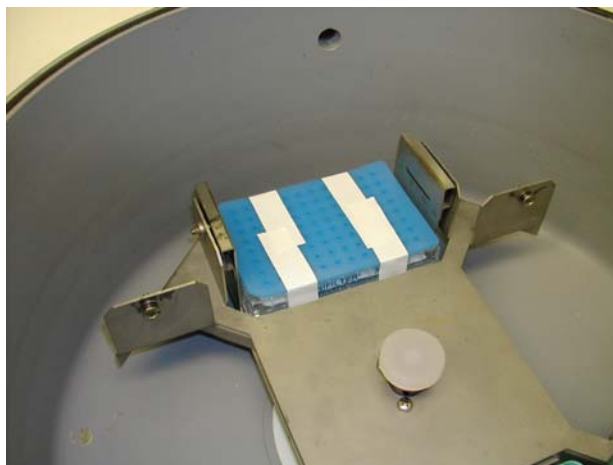
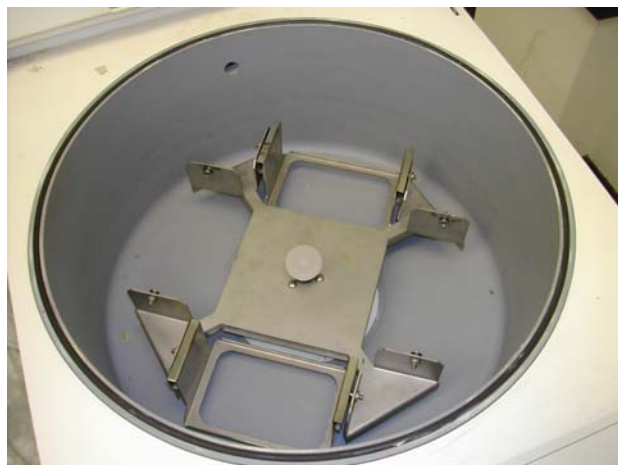
4) Tape or Velcro strips

Procedure

Step1: Place the well-plate filter (Product No. F96-2045-350) on top of the receiving well-plate. Add the desired quantity of sample to each well and then attach the cover to the filter plate. Use tape or Velcro strips to bind the three components together.



Step 2: Any centrifuge that will accommodate well-plates can be utilized, in this case we employed a Savant Speed Vac Plus, Model# SC210A. Place the well plates into the centrifuge apparatus and spin for the required time to completely filter the samples. This is usually only a few minutes. Remove the plates from the centrifuge and unfasten tape. Dispose of the filter plate and replace cover onto the sample well-plate, which is then ready for analysis.



Ideally, a well plate should be counterbalanced by an identical, but empty plate.

User Note

Some users spin down every sample before automated analysis to be certain that any particulates present are confined to the very bottom of the sample container. In addition, it is always wise to not place the syringe needle at the very bottom of a well or vial being sampled.