Detection and Screening

In early stage research and development of new drugs, using the right products and solutions designed for your particular needs can grant significant time and cost savings. Pall provides several purification and detection technologies to address the continuously increasing demands of high throughput screening applications and the diversified requirements of scientists. When it comes to drug screening and diagnostic assays, you can depend on Pall Life Sciences to meet the most stringent sample preparation requirements while lowering the expenses associated with sample loss and contamination.

Content

Drug Screening and Diagnostic Assays Application Selector

Filter Plates	Page Number	Drug Binding Studies	Kinase Assays	Multiplexing Assays	Neonatal Screening
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Lysine HyperD sorbent	56	•			
MEP HyperCel sorbent	63	•			
PPA HyperCel sorbent	62	•			
Protein A Ceramic HyperD F sorbent	57	•			
Q and S HyperCel sorbents	60	•			
SDR HyperD sorbent	66	•			
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Multi-well plate vacuum manifold	78, 276	•	•	•	•
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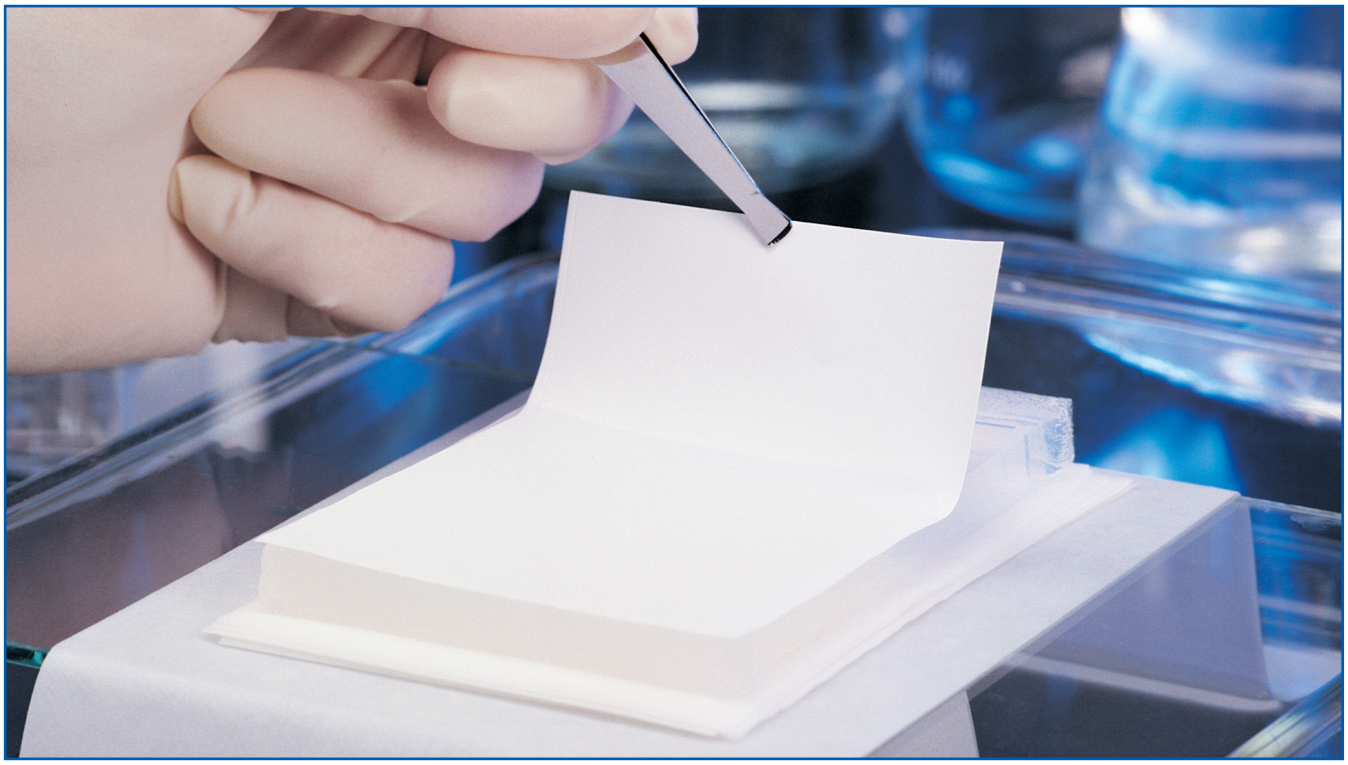
Detection Application Selector

Transfer and Detection Membranes	Page Number	Colony and Plaque Lifts	Protein Binding	Nucleic Acid Detection	ELISA	Macro Arrays	DNA Fingerprinting
Biodyne® A membranes	88	•		•	•		•
Biodyne B membranes	88	•		•		•	•
Biodyne C membranes	88		•		•	•	
Biodyne Plus membranes	88	•		•			•
BioTrace™ NT Nitrocellulose transfer membranes	90	•	•	•			
BioTrace PVDF transfer membranes	91		•	•			
FluoroTrans® PVDF transfer membranes	92		•				
FluoroTrans W PVDF transfer membranes	92		•				



Obtaining the Highest Sensitivities for Detection and Screening

PROTEIN AND DNA DETECTION

Membrane Overview

Biomolecules bind to membranes primarily through hydrophobic interactions. Even though a membrane may be hydrophilic (such as nylon), hydrophobic domains in the polymer are available to align with hydrophobic domains on the biomolecule. Charge interactions also play a role, allowing the highest level of sensitivity for nucleic acids to be achieved on positively-charged nylon membrane. This relationship is complex, and is often dependent on interactions with the detection reagents. Similarly, the highest levels of protein binding are also found on PVDF membranes. These membranes offer little opportunity for charge interactions, but are very hydrophobic.

Pall Corporation manufactures membranes made from nitrocellulose, nylon, and PVDF for molecular detection applications. Nylon membranes are available with neutral, positive, or negative surface charge. Activated surfaces designed for covalent attachment of proteins and nucleic acids are also available.

Binding Capacity Versus Avidity

In Pall's product literature, a great deal of information is available regarding the "binding capacity" of different membranes. These specifications are typically greater than 100 µg/cm^2, or as much as 500 µg/cm^2, and far exceed what can be effectively used for detection. Often, the highest signal with immobilized protein or nucleic acid occurs at approximately 1 µg/µL (about 10 µg/cm^2), and greater amounts actually result in decreased signal (prozone phenomenon in classic protein terminology). The most important factor to consider is not the maximum amount of protein that can be loaded onto a membrane surface, but the smallest amount that can be detected. This is related to the membrane's affinity and avidity, and is commonly expressed as sensitivity.

Blocking

Membranes with high affinity for biomolecules enable easy immobilization. At the same time, they will also adsorb detection reagents. Early blocking schemes used BSA and gelatin, which were found to be effective for polystyrene used in microplate ELISA assays. Because of physical binding properties, these reagents are insufficient for blocking nylon and PVDF membranes. They can, however, still be used with nitrocellulose. The best blocking agent for all membranes has been found to be milk casein, commonly used in buffers as either 2% dried milk or 0.5% Hammersten grade casein. These agents will work with proteins and nucleic acids and will usually provide excellent backgrounds with all detection systems.

Non-Specific Background

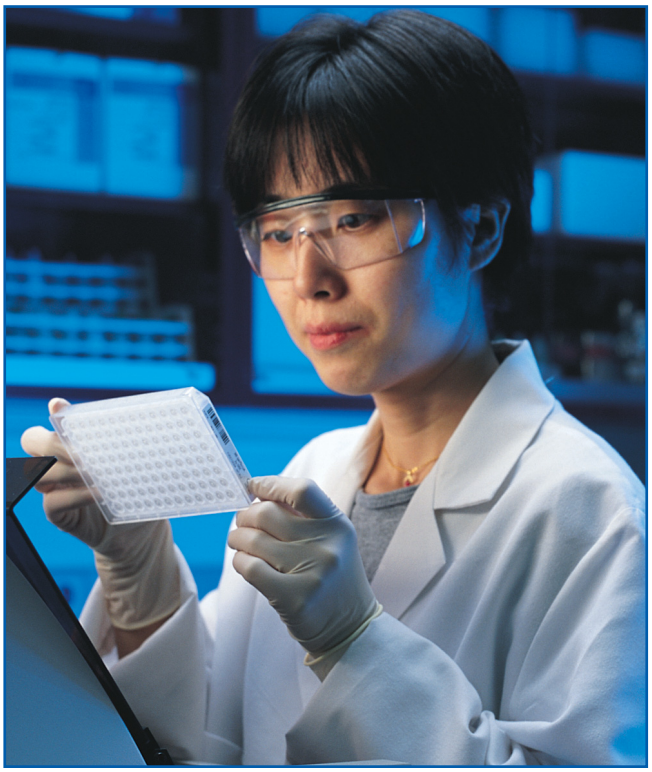
In some cases, background signal persists despite blocking with casein. The amount of background generated is usually tied to the detection reagents used. Background can be decreased by a variety of means, including decreasing probe and conjugate concentration, changing substrates or changing membrane type. The Pall website has several articles devoted to optimizing procedures and membrane choice in order to obtain the best balance between sensitivity and background.

DRUG SCREENING

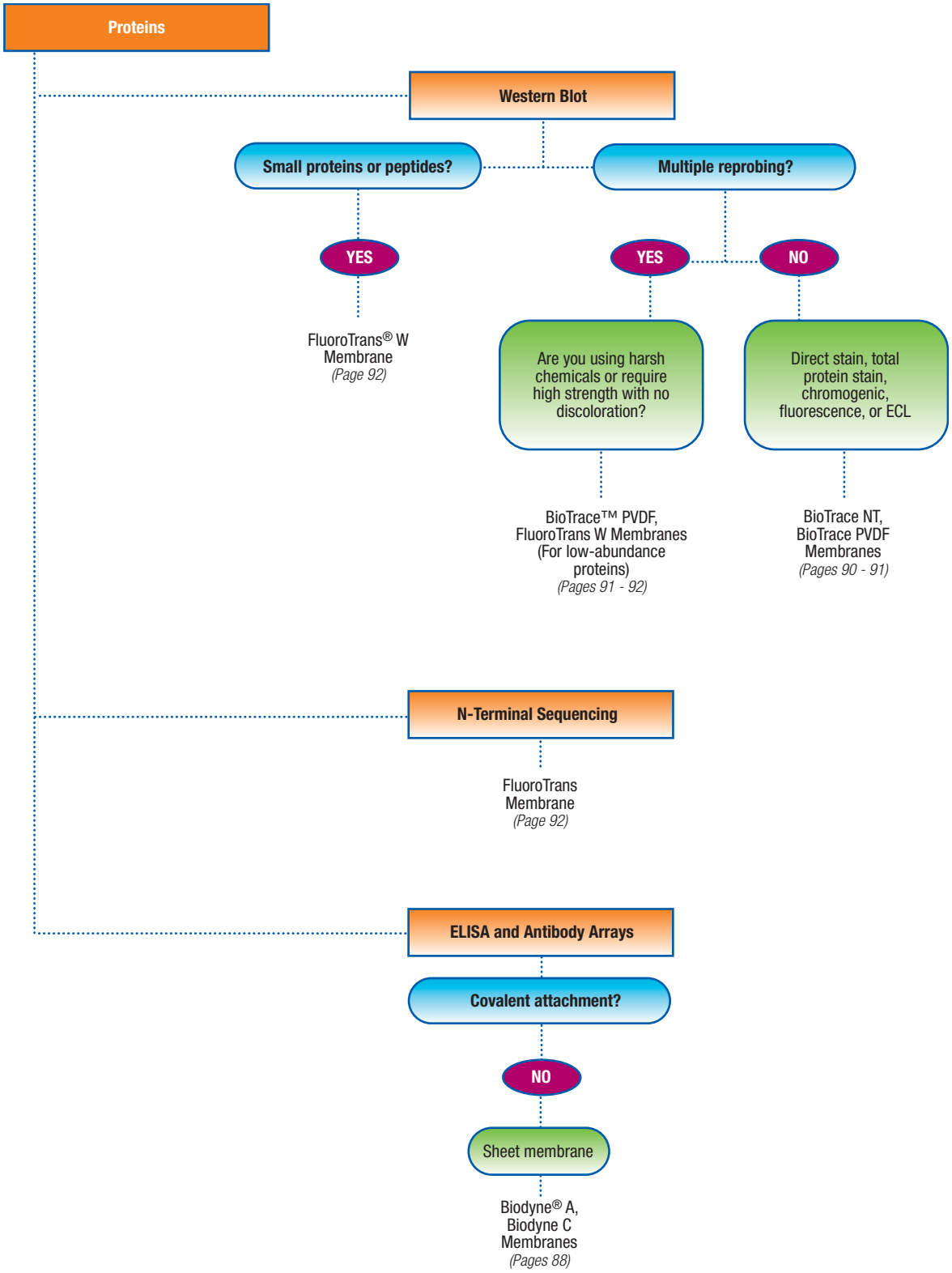
In early stage research and development of new drugs (i.e., combinatorial chemistry and high throughput screening), multi-well filter plates can grant significant time and cost savings. Pall provides several purification and detection technologies to address the continuously increasing demands of high throughput screening and the diversified requirements of scientists.

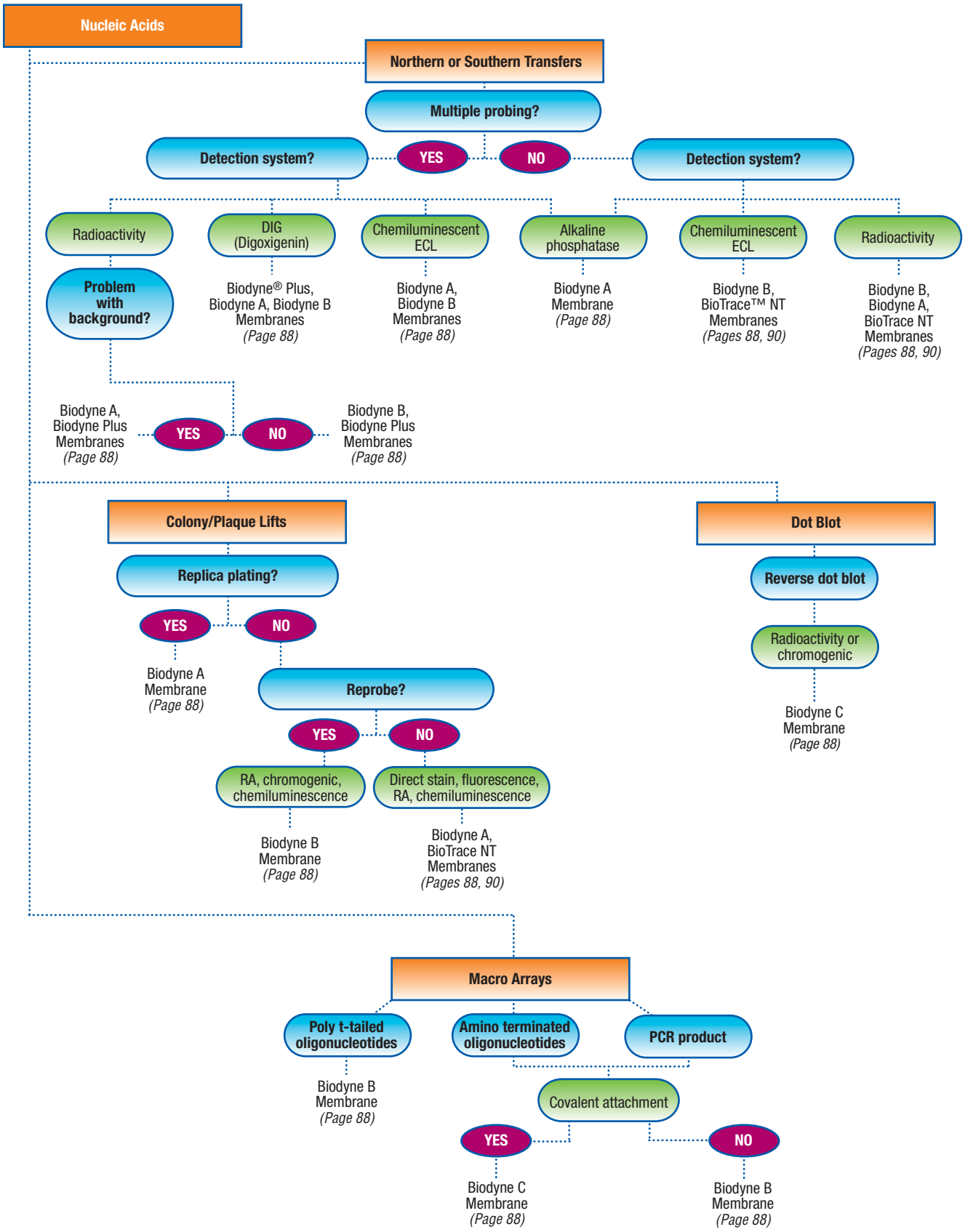
AcroPrep™ Advance and AcroPrep filter plates are designed in accordance with the requirements of the Society of Biomolecular Screening (SBS) to ensure safe robotic processing. This will minimize offline handling times. A rigid polypropylene housing and a serial bar code on each plate allow for worry-free and completely traceable sample processing with automated stackers, grippers, and plate readers. Unique, patented GHP (hydrophilic polypropylene) membrane allows users to perform radio-labeled cell assays with much lower cell density than traditional glass fiber matrices. In addition, the same membrane has very low fluorescent background. This presents additional application possibilities for more sensitive fluorescent assays such as time-resolved fluorescence (TRF) assays used in PerkinElmer's Delfia◆ System.

The large number of membrane and housing selections in 96- and 384-well configurations opens unlimited opportunities, including purification of combinatorial libraries, receptor: ligand assays, multiplexing assays such as Luminex◆ bead systems, or even protein-drug binding assays using Omega™ ultrafiltration membranes.



Detection Membrane Quick Selection Guide




Nucleic Acids
Northern or Southern Transfers
Multiple probing?
Detection system?
YES
NO
Detection system?
Radioactivity
DIG (Digoxigenin)
Chemiluminescent ECL
Alkaline phosphatase
Chemiluminescent ECL
Radioactivity
Problem with background?
Biodyne® Plus, Biodyne A, Biodyne B Membranes (Page 88)
Biodyne A, Biodyne B Membranes (Page 88)
Biodyne A Membrane (Page 88)
Biodyne B, BioTrace™ NT Membranes (Pages 88, 90)
Biodyne B, Biodyne A, BioTrace NT Membranes (Pages 88, 90)
Biodyne A, Biodyne Plus Membranes (Page 88)
YES
NO
Biodyne B, Biodyne Plus Membranes (Page 88)
Colony/Plaque Lifts
Dot Blot
Replica plating?
Reverse dot blot
YES
NO
Radioactivity or chromogenic
Biodyne A Membrane (Page 88)
Reprobe?
Biodyne C Membrane (Page 88)
YES
NO
RA, chromogenic, chemiluminescence
Direct stain, fluorescence, RA, chemiluminescence
Biodyne B Membrane (Page 88)
Biodyne A, BioTrace NT Membranes (Pages 88, 90)
Macro Arrays
Poly t-tailed oligonucleotides
Amino terminated oligonucleotides
PCR product
Biodyne B Membrane (Page 88)
Covalent attachment
YES
NO
Biodyne C Membrane (Page 88)
Biodyne B Membrane (Page 88)

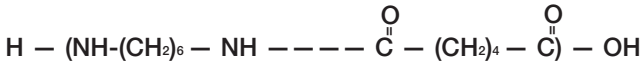
Hydrophobic Nylon and PVDF Membranes Have a High Affinity for Proteins

Membrane Structure

An examination of the molecular structure of nylon and PVDF membranes shows how hydrophobic bonds can form in membranes that are wet with water:

Nylon Membranes

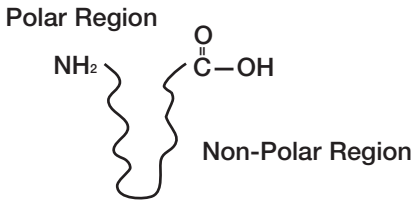
Pall nylon membranes are cast from Nylon 6,6:



The polymer structure is mostly non-polar with terminal amino and carboxyl groups. When formed into a membrane, the molecule can exhibit a structure like the one shown in Figure 1. The hydrophobic regions fold away from the surface of the pores so that the terminal polar groups are exposed. In this manner, a hydrophilic membrane can be formed from hydrophobic molecules.

Figure 1

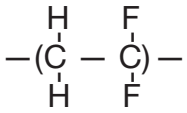
Probable Conformation of Nylon 6,6 Polymer Cast into a Water-Wettable Membrane



PVDF Membranes

Unmodified polyvinylidene fluoride (PVDF) membrane is hydrophobic and contains no charged groups for electrostatic interaction. Before use, air in the pore structure must be displaced using a low surface tension liquid (methyl alcohol), which can then be exchanged to water or buffer.

Polyvinylidene Fluoride:



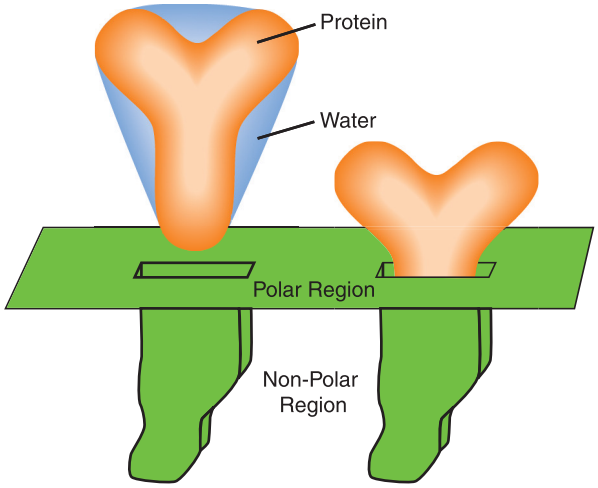
A Molecular Model

Biomolecules having secondary and tertiary structure are transported to the membrane surface by diffusion. When a structured molecule makes contact with the membrane, interactions occur between hydrophobic areas on the membrane and on the biomolecule (see following image). As this happens, the water layers surrounding the biomolecule and the membrane are squeezed out. As this occurs, the biomolecule loses structure. Large hydrophobic domains on both the biomolecule and the membrane can result in very strong associations.

This model is easier to visualize for proteins, which normally exist in globular shapes and contain complex combinations of charged groups, than for nucleic acids.

Nucleic acids have a regular structure and a negative charge at neutral pH. Despite this, nucleic acids bind to membranes in the same manner as proteins. There is enough secondary structure in the nucleic acid to favor hydrophobic binding when the molecules are brought into close contact with the membrane surface.

Association Between Protein and Nylon Membrane



Conclusions

A molecular model based primarily on hydrophobic interactions is consistent with all of the test data for both protein and DNA binding. The model consists of the following steps:

1. Transport of the biomolecules to the membrane surface by diffusion.
2. Alignment of hydrophobic domains on the biomolecule and the membrane.
3. Penetration of hydrophobic regions on the biomolecule into hydrophobic regions in the membrane.
4. Elimination of layers of hydration surrounding these regions on both the membrane and biomolecule.

The model explains the high affinity of hydrophobic PVDF membranes for proteins and nucleic acids, as well as the high bond strength. The model also predicts low binding to hydroxyl modified membranes, and how biomolecules can be forced to attach to intrinsically low binding membranes by removing water.

In this model, the term binding capacity is replaced with binding affinity. A membrane will have an affinity for biomolecules dependent on its hydrophobic components and, to a much lesser extent, surface chemistry. These factors are predictive of how "sticky" a membrane is, and how it is likely to perform in biological applications.

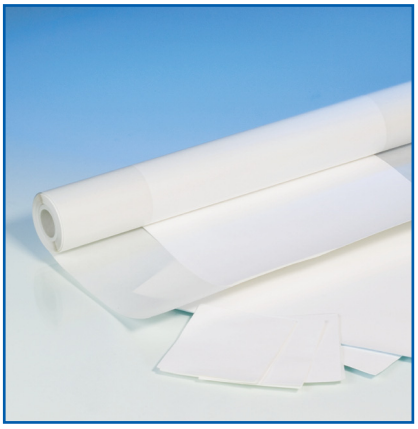
Detection and Screening – Online Reference Library

Pall's website offers an extensive collection of product, technical, and application information. This valuable online reference library features hundreds of technical articles, posters, podcasts, application notes, and more that can help you get the most out of your process. To view the following titles online – and many others – click the Literature Library link on the left sidebar when you visit **www.pall.com/lab**.

- Activation Protocol for Biodyne® C Membrane for Subsequent Covalent Linking of Ligands
- Affinity Activated or Activatable Membranes – Introduction
- Chemiluminescent Detection of Protein Binding
- Desalting/Buffer Exchange for Biomolecules Using AcroPrep™ 96 Ultrafiltration Filter Plates
- Efficient Multi-Well Protein Purification Strategies
- High Throughput Genomic and Proteomic Sample Preparation
- Hybridization Procedures for Biodyne Membranes
- IMAC Purification of Polyhistidine-tagged Protein Using the AcroPrep 96 Filter Plate
- Streamlined Purification of Plasmid DNA From Prokaryotic Cultures
- Transfer and Detection Procedures for Pall Life Sciences Membranes
- Using Membranes to Obtain High Sensitivities in Nucleic Acid and Protein Detection

Biodyne® Nylon Transfer Membranes

High sensitivity and low background for enhanced detection and resolution



- Will not crack, shrink, or tear when subjected to multiple cycles of hybridization, stripping, and reprobing.
- Membranes are intrinsically hydrophilic for easy wetting.
- Offers superior performance with radioactive (Biodyne B membrane) and non-radioactive (Biodyne A membrane) detection systems.

Applications

Four chemistries provide versatile adsorption properties:

Biodyne A Membrane
(Amphoteric Nylon 6,6) Membrane zeta potential can be modulated by changes in pH. Ideal for single probe or multiple rehybridizations, and applications where background is troublesome.

Biodyne B Membrane
(Positively-charged Nylon 6,6) Pore surfaces are populated by a high density of quaternary ammonium groups. Our highest sensitivity nylon membrane for nucleic acid applications.

Biodyne C Membrane
(Negatively-charged Nylon 6,6) Can be derivatized by coupling reactions through the carboxyl groups on the pore surfaces.

Biodyne Plus Membrane
(Positively-charged Nylon 6,6 with an extremely high isoelectric point) With certain non-radioactive detection systems, it is more sensitive than Biodyne A membrane while exhibiting lower background than Biodyne B membrane.

Specifications

Filter Media

Biodyne A Membrane: Amphoteric Nylon 6,6
Biodyne B and Plus Membranes: Positively-charged Nylon 6,6
Biodyne C Membrane: Negatively-charged Nylon 6,6

Pore Size

0.2, 0.45, and 1.2 µm

Typical Thickness

Membrane	µm	mils
Biodyne A	5.5 - 7.0	139.7 - 177.8
Biodyne B	5.7 - 6.7	144.8 - 170.2
Biodyne Plus	5.7 - 6.7	144.8 - 170.2
Biodyne C	11.0 - 13.0*	279.4 - 330.2

*Dual layer measurements

Solvent Compatibility

Resistant to common solvents such as acetone, alcohol, chlorinated aliphatic hydrocarbons, formamide, 2M NaOH, DMSO, and dimethylformamide. Not compatible with concentrated formic acid (> 50%), HCl (> 4M), oxidizing agents, and long exposures (days to weeks) to pH < 2.

Ordering Information

Biodyne A Membrane

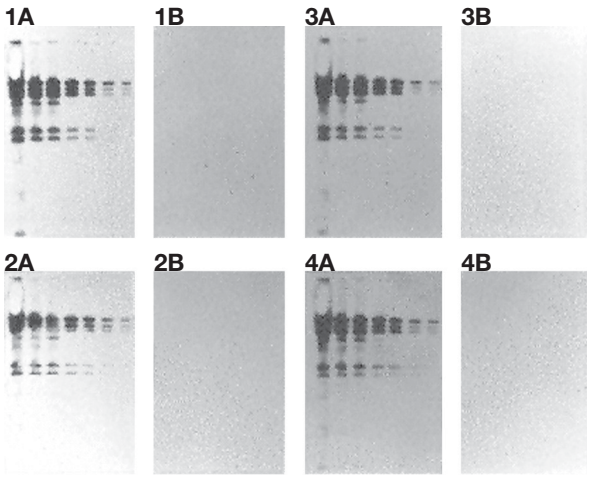
Part Number	Description	Pkg
60113	0.2 µm, 30 cm x 3 m roll	1/pkg
60102	0.45 µm, 82 mm discs	50/pkg
60103	0.45 µm, 85 mm discs	50/pkg
60104	0.45 µm, 132 mm discs	50/pkg
60105	0.45 µm, 137 mm discs	50/pkg
60101	0.45 µm, 7 x 8.5 cm sheets	10/pkg
60100	0.45 µm, 20 x 20 cm sheets	10/pkg
60120	0.45 µm, 20 cm x 3 m roll	1/pkg
60106	0.45 µm, 30 cm x 3 m roll	1/pkg
60108	1.2 µm, 30 cm x 3 m roll	1/pkg

Biodyne B Membrane, 0.45 µm

Part Number	Description	Pkg
60202	82 mm discs	50/pkg
60203	85 mm discs	50/pkg
60204	132 mm discs	50/pkg
60205	137 mm discs	50/pkg
60201	7 x 8.5 cm sheets	10/pkg
60200	20 x 20 cm sheets	10/pkg
60209	20 cm x 1 m roll	1/pkg
60208	20 cm x 3 m roll	1/pkg
60207	30 cm x 3 m roll	1/pkg

Performance

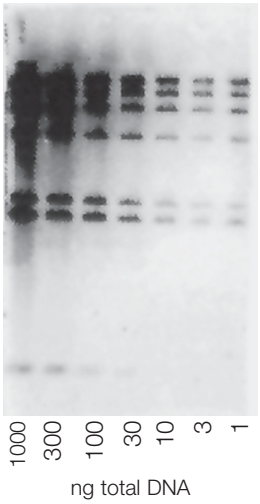
Biodyne® B Membrane Withstands Multiple Cycles of Stripping and Reprobing



*Lambda-*Hind*III fragments were separated in an agarose gel and transferred to Biodyne B membrane using the Pall Improved Alkaline Transfer. The blot was stripped completely and reprobed four times without loss of signal intensity. Bands were detected using a chemiluminescent detection system.*

1A - 4A: blot after (re)probing
1B - 4B: blot after stripping, prior to (re)probing

Fluorescent Detection of DNA Using Biodyne Plus Membrane



Dilutions of Hind*III-digested l-DNA (1000 - 1 ng/lane) were separated in an agarose gel and transferred to Biodyne Plus membrane. Signal was generated using a fluorescein-labeled probe, antifluorescein-alkaline phosphatase conjugate, and precipitating substrate. The image was generated by scanning the blot with a FluorImager◆ system.*

Ordering Information

Biodyne C Membrane, 0.45 µm

Part Number	Description	Pkg
60316	82 mm discs	50/pkg
60317	85 mm discs	50/pkg
60318	132 mm discs	50/pkg
60319	137 mm discs	50/pkg
60315	7 x 8.5 cm sheets	10/pkg
60314	20 x 20 cm sheets	10/pkg

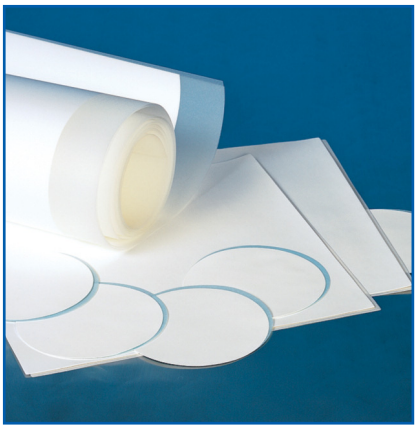
In addition to standard sizes, these membranes are available in custom-cut sizes. For information on sizes and cuts, call your local Pall Life Sciences office.

Biodyne Plus Membrane, 0.45 µm

Part Number	Description	Pkg
60402	82 mm discs	50/pkg
60403	85 mm discs	50/pkg
60404	132 mm discs	50/pkg
60405	137 mm discs	50/pkg
60401	7 x 8.5 cm sheets	10/pkg
60400	20 x 20 cm sheets	10/pkg
60406	30 cm x 3 m roll	1/pkg

BioTrace™ NT Nitrocellulose Transfer Membrane

Pure, unsupported nitrocellulose membrane for nucleic acid and protein detection



- High binding capacity for proteins and nucleic acids.
- Lower protein burnthrough than competitors in electrophoretic transfers.

Applications

- Colony/plaque lifts.
- Protein transfers.

Specifications

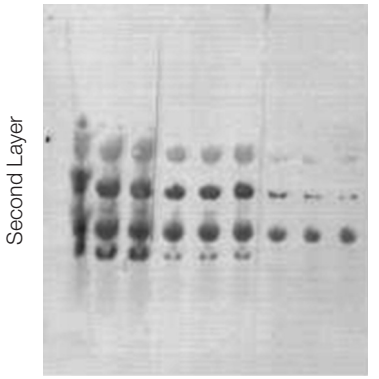
Filter Media
BioTrace NT (nitrocellulose)

Typical Thickness
101.6 - 190.5 µm (4.0 - 7.5 mils)

Pore Size
0.2 µm

Performance

Low Burnthrough With Nitrocellulose Membranes



Prestained proteins were separated in a polyacrylamide gel and electrophoretically transferred to the indicated nitrocellulose membranes. A double layer of membrane was used, one directly against the gel, followed by the second layer. Signal intensity on the second layer is indicative of burnthrough, which can lead to loss of signal.

Ordering Information

BioTrace NT Nitrocellulose Transfer Membrane

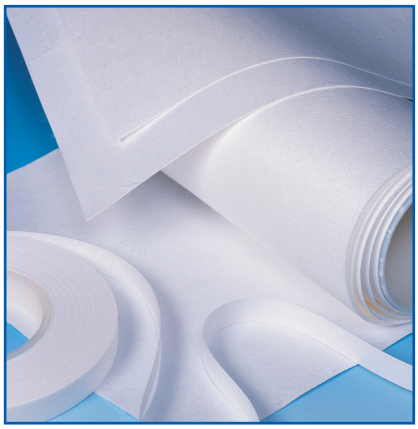
Part Number	Description	Pkg
66487	82 mm discs	50/pkg
66595	85 mm discs (gamma irradiated)	50/pkg
66518	132 mm discs	50/pkg
66488	137 mm discs	50/pkg
66593	7 x 8.5 cm sheets	10/pkg
66489	20 x 20 cm sheets	10/pkg
66485	30 cm x 3 m roll	1/pkg

Related Products

AcroWell™ 96-Well Membrane-Bottom Filter Plates With BioTrace NT Membrane 97
Stainless Steel Forceps 230, 280

BioTrace™ PVDF Transfer Membrane

Ideally suited for Western Transfers with total protein stain



- Low background with chemiluminescent detection systems.
- Broad compatibility with commonly used solvents.

Applications

- Ideal for protein sequencing.

Specifications

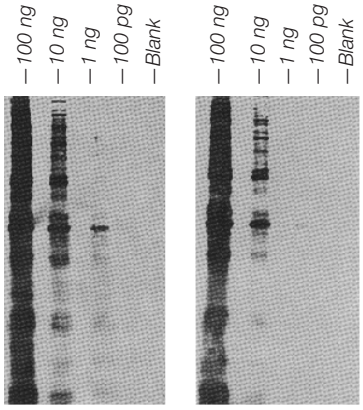
Filter Media
BioTrace PVDF (hydrophobic polyvinylidene fluoride)

Pore Size
0.45 µm

Typical Thickness
147 µm (5.8 mils)

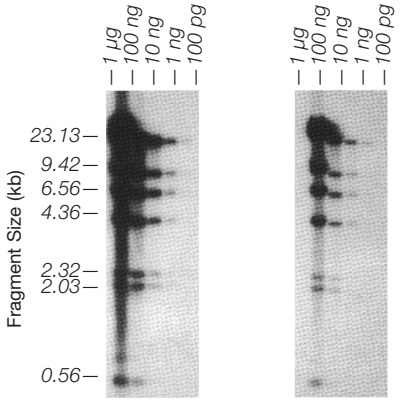
Performance

Western Transfer to BioTrace PVDF Membrane



Serial dilutions of E. coli *lysates were transferred from a 10 to 20% gradient gel to BioTrace PVDF and a competitive PVDF membrane, then probed with rabbit anti-*E. coli *antibodies. Proteins were visualized using peroxidase-conjugated goat anti-rabbit antibodies and 4-chloro-1-naphthol substrate solution.*

Southern Transfer to BioTrace PVDF Membrane



Dilutions of λ-DNA HindIII *fragments were separated electrophoretically on a 0.8% agarose gel and transferred under alkaline conditions to Pall Life Sciences BioTrace PVDF membrane, as well as a competitive PVDF membrane. The DNA was fixed by baking at 80 °C (176 °F) for 1 hour and the fragments identified with a ^{32}P λ-DNA probe hybridized at 65 °C (149 °F) for 16 hours.*

Ordering Information

BioTrace PVDF Transfer Membrane

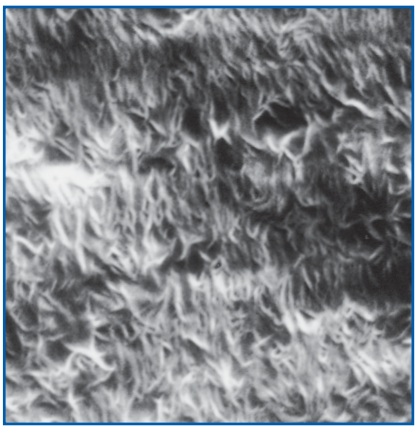
Part Number	Description	Pkg
66594	7 x 8.5 cm sheets	10/pkg
66542	20 x 20 cm sheets	10/pkg
66547	20 cm x 1 m roll	1/pkg
66543	30 cm x 3 m roll	1/pkg

Related Products

AcroWell™ 96-Well Membrane-Bottom Filter Plates With BioTrace NT Membrane 97
Stainless Steel Forceps 230, 280

FluoroTrans® PVDF Transfer Membranes

Sensitive protein detection with low background and very low burnthrough



- Naturally hydrophobic polyvinylidene fluoride is ideal for a wide variety of protein-analysis applications. The family of FluoroTrans media are white, microporous solid phase supports that bind proteins tenaciously via hydrophobic interactions.
- High sensitivity for small peptides.
- High protein binding capacity. Typically absorbs 50% more protein than nylon or nitrocellulose.
- FluoroTrans PVDF membrane is optimized for N-terminal protein sequencing. The medium demonstrates good signal-to-noise ratios with standard detection systems, and immobilized proteins can be used directly for sequencing, or visually detected with common staining reagents including Amido Black, Ponceau S, and colloidal gold.
- FluoroTrans W membrane is optimized for Western transfer applications. This membrane allows for sensitive protein detection with low background and very low protein burnthrough. Immobilized proteins can be visually detected with Coomassie◆ blue, Amido Black, Ponceau S, and colloidal gold.

Applications

FluoroTrans W Membrane

- Southern transfers.

FluoroTrans PVDF Membrane

- N-terminal protein sequencing.
- Fluorescent western transfers.
- FluoroTrans media have high tensile strength and will not tear, crack, or curl during handling. This allows for easy removal of target bands for protein sequencing applications.

Specifications

Filter Media
FluoroTrans PVDF (hydrophobic polyvinylidene fluoride)

Pore Size
0.2 µm

Typical Thickness
127 µm (5.0 mils)

Performance

FluoroTrans Membrane Has Excellent Sensitivity, Signal, and Background in Western Transfers

FluoroTrans PVDF Membrane | FluoroTrans W Membrane | Competitor PVDF Membrane

Rabbit reticulocyte lysate (Amersham) was loaded in lanes of polyacrylamide gels at f.s., 1/3 and 1/10 dilutions. After electrophoresis, proteins were transferred to membranes. Membranes were stained with 0.1% Amido Black, 45% methanol, and 2% acetic acid for 4 minutes; then destained for 5 minutes with two changes of 90% methanol and 2% acetic acid. Stained membranes were rinsed in water and air dried.

Ordering Information

FluoroTrans PVDF Transfer Membrane

Part Number	Description	Pkg
PVM020C-160	7 x 8.4 cm sheets	10/pkg
PVM020C-195	8.5 x 9 cm sheets	20/pkg
PVM020C1015	10 x 15 cm sheets	10/pkg
PVM020C-196	13 x 14 cm sheets	10/pkg
PVM020C2020	20 x 20 cm sheets	10/pkg
PVM020C-099	26 cm x 3.3 m roll	1/pkg

FluoroTrans W PVDF Transfer Membrane

Part Number	Description	Pkg
BSP0158	7 x 9 cm sheets	10/pkg
BSP0157	10 x 15 cm sheets	10/pkg
BSP0159	20 x 20 cm sheets	10/pkg
BSP0161	26 cm x 3.3 m roll	1/pkg

AcroPrep™ Advance 96-Well Filter Plates for Aqueous Filtration

Fast processing with efficient removal of particulates

- New well geometry results in faster, more uniform filtration rates across the plate with reduced hold-up volume.
- New outlet tip geometry facilitates direct flow of samples into receiver plate without concerns of cross-contamination.
- Varied membrane and pore size selection offers efficient particulate removal.
- Manufactured in accordance with SBS guidelines, allowing plates to be run in manual, semi-automated and automated processes.
- Smooth top surface and textured window allow for easy labeling on the plates.

Applications

- General sample prep.
- Gross fractionation.
- Cell harvesting.
- Cell-based assays.

Specifications

Materials of Construction

Filter Media: Supor® (polyethersulfone), glass fiber (borosilicate glass without binder), and PP/PE non-woven (polypropylene/polyethylene) media
Plate Housing: Polyproylene
Lid: Polystyrene

Dimensions

Length: 12.8 cm (5.0 in.)
Width: 8.6 cm (3.4 in.)
Height With Lid: 1.8 cm (0.7 in.) (350 µL only)
Height Without Lid: 350 µL, 1.4 cm (0.6 in.); 1 mL: 3.3 cm (1.3 in.); 2 mL: 4.7 cm (1.9 in.)

Well-Bottom Area

0.25 cm^2

Recommended Working Volume

350 µL: ≤ 300 µL
1 mL: ≤ 900 µL
2 mL: ≤ 1.9 mL

Recommended Operating Vacuum

≥ 25.4 cm Hg (10 in. Hg)

Recommended Centrifugal Force

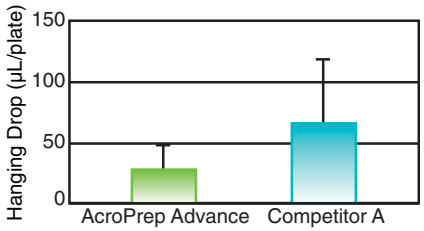
1,500 x g

Typical Vacuum Filtration Performance

Membrane	Processing Time (sec)	Hold-Up Volume (µL)
0.2 µm Supor	9	8
0.45 µm Supor	5	6
1.2 µm Supor	2	5
1.0 µm Glass Fiber	2	19
30-40 µm PP/PE	1	4

Performance

Reduction of Hanging Drops Reduces Potential Cross-Contamination



Hanging drops were measured by evacuating wells of fluid, weighing the plate, and then blotting and re-weighing the plate. Three plates of each type (350 µL well volume) were tested and the averages calculated.

Ordering Information

AcroPrep Advance 96-Well Filter Plates for Aqueous Filtration

Part Number	Description	Pkg
8019	350 µL, 0.2 µm Supor membrane	10/pkg
8029	350 µL, 0.45 µm Supor membrane	10/pkg
8039	350 µL, 1.2 µm Supor membrane	10/pkg
8027	350 µL, 30-40 µm PP/PE non-woven media	10/pkg
8031	350 µL, 1.0 µm glass fiber	10/pkg
8119	1 mL, 0.2 µm Supor membrane	5/pkg
8129	1 mL, 0.45 µm Supor membrane	5/pkg
8130	1 mL, 1.2 µm Supor membrane	5/pkg
8131	1 mL, 1.0 µm glass fiber	5/pkg
8127	1 mL, 30-40 µm PP/PE non-woven media	5/pkg
8231	2 mL, 1.0 µm glass fiber	5/pkg
8227	2 mL, 30-40 µm PP/PE non-woven media	5/pkg

Accessories and Replacement Parts

Part Number	Description	Pkg
5017	Multi-well plate vacuum manifold	1/pkg
5225	Adapter collar for centrifugation	2/pkg
5226	Adapter for PCR receiver plate	2/pkg
5230	Cap mat for incubation	5/pkg
8001	AcroPrep Advance multi-well plate lids	10/pkg

AcroPrep™ Advance 96-Well Filter Plates for Multiplexing

Superior bead recovery and low levels of false positives ensure assay reproducibility

- Smooth well wall provides efficient bead recovery, ensuring reproducible results lot after lot.
- High performance membrane does not trap microspheres in the membrane matrix.
- In serological assays, Supor® membrane effectively removes IgG complexes, thus reducing non-specific reactivity of the microspheres and reducing false positives.
- New well design results in faster, more uniform filtration rates across the plate with reduced hold-up volume.
- New outlet tip geometry minimizes sample leakage and loss during incubation steps so that acquisition times are not affected.
- Intrinsic plate and membrane properties minimize target loss from non-specific binding.

Applications

- Bead-based multiplexing assays.
- Flow cytometry.

Specifications

Materials of Construction
Filter Media: PP/PE non-woven (polypropylene/polyethylene) and Supor (polyethersulfone) membrane
Plate Housing: Polyproylene
Lid: Polystyrene

Dimensions
Length: 12.8 cm (5.0 in.)
Width: 8.6 cm (3.4 in.)
Height With Lid: 1.8 cm (0.7 in.)
Height Without Lid: 350 µL, 1.4 cm (0.6 in.)

Well-Bottom Area
0.25 cm^2

Recommended Working Volume
350 µL: ≤ 300 µL

Recommended Operating Vacuum
≥ 25.4 cm Hg (10 in. Hg)

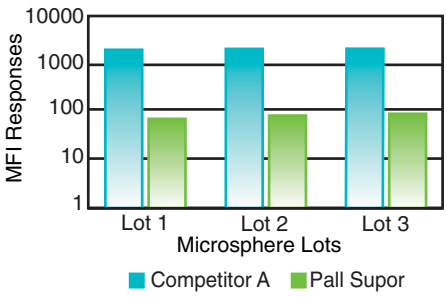
Recommended Centrifugal Force
1,500 x g

Typical Processing Time
Vacuum: 1 second (8027)
Vacuum: 2 seconds (8049, 8029)
Vacuum: 9 seconds (8019)
Centrifuge: < 2 minutes (8049, 8029)

Typical Hold-Up Volume
Vacuum: 4 µL (8027)
Vacuum: 5 µL (8049, 8029)
Vacuum: 8 µL (8019)
Centrifuge: 3 µL (8049, 8029)

Performance

Pall Supor Membrane Reduces the Occurrence of False Positive Results



The serological immunoassays were performed with multiple lots of xMAP microspheres in both the Pall Supor and Competitor A filter plates. The results from these filter plates were read with one Luminex® LX100 Instrument. The responses represent the reactivity toward microspheres without proteins coupled to them to maximize the indications of false positive "non-specific" reactivity by the microspheres. In all lots of microspheres tested, the Pall Supor filter plates exhibited a marked reduction in non-specific reactivity than competitive plates. Data generated in conjunction with Luminex Software, Inc.

Ordering Information

AcroPrep Advance 96-Well Filter Plates for Multiplexing

Part Number	Description	Pkg
8019	350 µL, 0.2 µm Supor membrane	10/pkg
8029	350 µL, 0.45 µm Supor membrane	10/pkg
8049	For multiplex assays	10/pkg
8027	350 µL, 30 - 40 µm PP/PE non-woven media	10/pkg

Accessories and Replacement Parts

Part Number	Description	Pkg
5017	Multi-well plate manifold	1/pkg
5225	Adapter collar for centrifugation	2/pkg
5230	Cap mat for incubation	5/pkg
8001	AcroPrep Advance multi-well plate lids	10/pkg

AcroPrep™ Advance 96-Well Filter Plates for Neonatal Screening

Consistent performance ensures accurate results

- High performance membrane effectively holds back fibers from dried blood spots which can interfere with optical density readings.
- New outlet tip geometry minimizes sample leakage and loss during incubation steps, decreasing the time required for sample retesting and second screens.
- Optimized well design provides consistency in filtration times, ensuring reproducibility lot after lot.
- New outlet tip design reduces the presence of hanging drops following filtration and minimizes sample cross-contamination.

Applications

- Screening of functional and genetic disorders on newborn babies.
- Sample preparation for assays such as BIOT, GALT, and TGAL.

Specifications

Materials of Construction
Filter Media: Supor® (polyethersulfone) membrane and glass fiber/Supor membrane
Plate Housing: Polyproylene
Lid: Polystyrene

Dimensions
Length: 12.8 cm (5.0 in.)
Width: 8.6 cm (3.4 in.)
Height With Lid: 1.8 cm (0.7 in.)
Height Without Lid: 350 µL, 1.4 cm (0.6 in.)

Well-Bottom Area
0.25 cm^2

Recommended Working Volume
350 µL: ≤ 300 µL

Recommended Operating Vacuum
≥ 25.4 cm Hg (10 in. Hg)

Recommended Centrifugal Force
1,500 x g

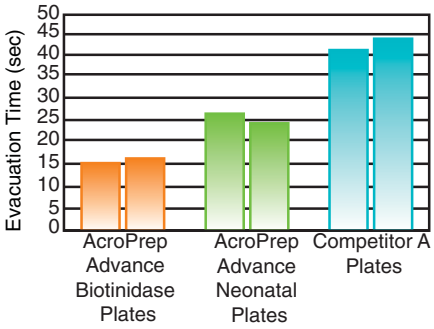
Typical Processing Time
Vacuum: 2 seconds
Centrifuge: < 2 minutes

Typical Hold-Up Volume
Filter plate was filled with 300 µL of water and filtered at 10 in. Hg
PN 8079
Vacuum: 5 µL

PN 8060
Vacuum: 17 µL

Performance

Efficient Filtration Times With Optimized Membrane Configurations



Evacuation times of different filter plates were tested for use in the SPOTCHECK® Biotinidase Microplate assay (data performed in duplicate). Both AcroPrep Advance filter plates showed decreased processing times compared to Competitor A allowing for increased throughput, especially on automated instrument platforms. Data generated in conjunction with Astoria-Pacific International.

Ordering Information

AcroPrep Advance 96-Well Filter Plates for Neonatal Screening

Part Number	Description	Pkg
8060	For biotinidase assays	10/pkg
8079	For neonatal screening	10/pkg

Accessories and Replacement Parts

Part Number	Description	Pkg
5017	Multi-well plate manifold	1/pkg
5225	Adapter collar for centrifugation	2/pkg
5230	Cap mat for incubation	5/pkg
8001	AcroPrep Advance multi-well plate lids	10/pkg