

# ELECTROPHORESIS

## Immun-Blot® LF PVDF Membranes

- High signal-to-background ratio enables protein detection down to the subnanogram range using fluorescent western blotting
- Compatible detection methods:
  - Colorimetric
  - Chemiluminescent
  - Fluorescent
  - Chemifluorescent
- Key characteristics: low autofluorescence, high protein-binding capacity, low nonspecific binding, and durability



## Superior Membranes for Your Fluorescent Immunoblotting Needs

With recent technological advances, fluorescent detection is becoming more mainstream given the unique advantages it provides over chemiluminescent detection; these include a longer signal duration, broader dynamic range, more accurate quantitation, and the ability to multiplex.

Polyvinylidene fluoride (PVDF) membranes are a popular choice for immunoblotting applications because of their key characteristics, which include durability, low non-specific binding, high sensitivity, and the ability to withstand reprobing. However, standard PVDF membranes are autofluorescent and therefore generate a high background and lower signal-to-background ratio, reducing dynamic range and making accurate quantitation more challenging.

Bio-Rad's Immun-Blot LF PVDF membranes offer the same benefits as standard PVDF membranes in addition to minimal autofluorescence and high sensitivity, making them the premium choice for fluorescent and multiplex fluorescent immunoblotting needs.

### High Signal-to-Background Ratios

Fluorescence applications require high-quality membranes without the inherent autofluorescence of standard PVDF membranes. Bio-Rad's Immun-Blot LF PVDF membranes produce highly sensitive and quantitative results (Figure 1) because the fluorescent blots exhibit superior signal-to-background ratios (Figure 2).

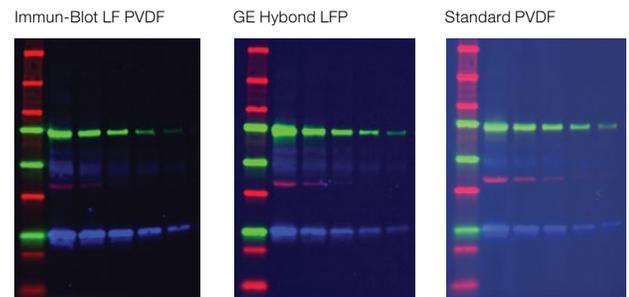


Fig. 1. Immun-Blot LF PVDF membranes have minimal autofluorescence compared to other PVDF membranes.

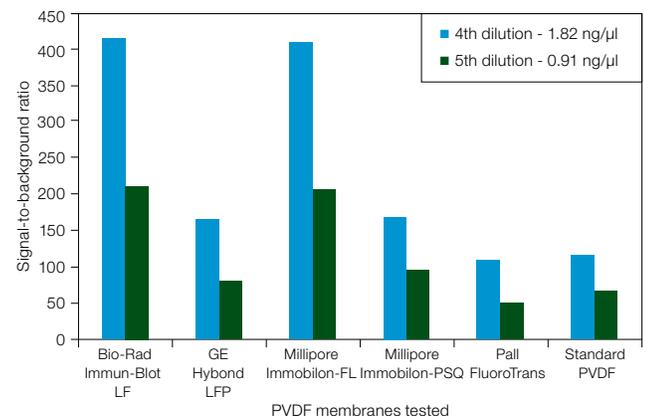


Fig. 2. Comparison of signal-to-background ratios from the fourth and fifth dilutions. Signal-to-background ratios were plotted to demonstrate increased signal detection due to the low autofluorescent properties of some of the PVDF membranes tested. Analysis was performed on the blue channel since this is where autofluorescence is most common and problematic.



## High Sensitivity

The superior binding capacity of the membranes allows them to retain more proteins, thus improving the transfer efficiency and downstream detection of low abundance proteins. The improved sensitivity of

Bio-Rad's LF PVDF membranes in comparison to other PVDF membranes is demonstrated in Figure 3. The serial dilution of GST was performed, processed, and imaged simultaneously.

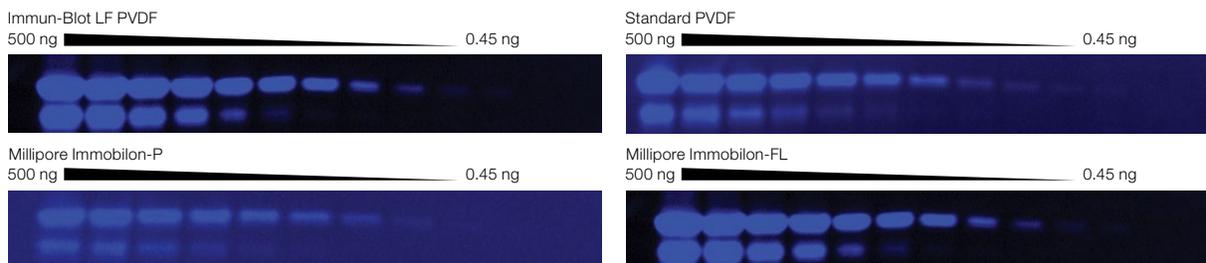


Fig. 3. Immun-Blot LF PVDF membranes provide higher sensitivity than other PVDF membranes on the market.

Table 1. Comparison of pore size and binding capacity of low fluorescent membranes.

Vendor	Bio-Rad Immun-Blot LF PVDF	Pall FluoroTrans PVDF	GE Healthcare Hybond LFP	Millipore Immobilon-FL	Millipore Immobilon-P
Pore size, $\mu\text{m}$	0.45	0.22	0.22	0.45	0.45
Binding capacity, $\mu\text{g}/\text{cm}^2$	300	300	>400	300	294

Table 2. Common fluorescent stains and dyes.

Fluorescent Stains/Dyes	Light Sources	Filters		
		Pharos FX™	ChemiDoc™ MP	ChemiDoc™ XRS+
Cy2	Epi Blue	530DF30	530/28	520/30
Cy3	Epi Green	605BP	605/50	Not Supported
Cy5	Epi Red	695DF55	695/55	Not Supported
Alexa Fluor 488	Epi Blue	530DF30	530/28	520/30
Alexa Fluor 532	Epi Green	605BP	530/28	Not Supported
Alexa Fluor 546	Epi Green	605BP	605/50	Not Supported
Alexa Fluor 555	Epi Green	605BP	605/50	Not Supported
Alexa Fluor 633	Epi Red	695DF55	695/55	Not Supported
Alexa Fluor 647	Epi Red	695DF55	695/55	Not Supported
Alexa Fluor 680	Epi Red	695DF55	695/55	Not Supported
DyLight 488	Epi Blue	530DF30	530/28	520/30
DyLight 549	Epi Green	605BP	605/50	Not Supported
DyLight 633	Epi Red	695DF55	695/55	Not Supported
DyLight 649	Epi Red	695DF55	695/55	Not Supported
DyLight 680	Epi Red	695DF55	695/55	Not Supported
Qdot 525	488 nm / UV Trans	530DF30	530/28	520/30
Qdot 565	488 nm / UV Trans	555LP	530/28	560/50 or std
Qdot 585	488 nm / UV Trans	Not Supported	630/50	560/50 or std
Qdot 605	488 nm / UV Trans	605BP	630/50	std
Qdot 625	488 nm / UV Trans	605BP	630/50	630/30 or std
Qdot 655	488 nm / UV Trans	695DF55	695/55	630/30 or std
Qdot 705	488 nm / UV Trans	695DF55	695/55	Not Supported

## Ordering Information

Catalog #	Description
162-0260	Immun-Blot LF PVDF Filter Sets, pkg of 10, 7 x 8.5 cm, precut low fluorescence PVDF/filter paper for immunoblotting
162-0261	Immun-Blot LF PVDF Filter Sets, pkg of 20, 7 x 8.5 cm, precut low fluorescence PVDF/filter paper for immunoblotting
162-0262	Immun-Blot LF PVDF Filter Sets, pkg of 10, 8.5 x 13.5 cm, precut low fluorescence PVDF/filter paper for immunoblotting
162-0263	Immun-Blot LF PVDF Filter Sets, pkg of 20, 8.5 x 13.5 cm, precut low fluorescence PVDF/filter paper for immunoblotting
162-0264	Immun-Blot LF PVDF Membrane, pkg of 1 roll, 28 cm x 3.8 m, low fluorescence PVDF membrane for immunoblotting

Alexa Fluor, is a trademark of Invitrogen Corporation. Cy and Hybond are trademarks of GE Healthcare group companies. DyLight is a trademark of Thermo Fisher Scientific, Inc. Qdot is a trademark of Invitrogen Corporation. FluoroTrans is a trademark of Pall Corporation. Immobilon is a trademark of the Millipore Corporation.



**Bio-Rad  
Laboratories, Inc.**

Life Science  
Group

Web site [www.bio-rad.com](http://www.bio-rad.com) USA 800 424 6723 Australia 61 2 9914 2800 Austria 01 877 89 01 Belgium 09 385 55 11 Brazil 55 11 5044 5699 Canada 905 364 3435 China 86 21 6169 8500 Czech Republic 420 241 430 532 Denmark 44 52 10 00 Finland 09 804 22 00 France 01 47 95 69 65 Germany 089 31 884 0 Greece 30 210 9532 220 Hong Kong 852 2789 3300 Hungary 36 1 459 6100 India 91 124 4029300 Israel 03 963 6050 Italy 39 02 216091 Japan 03 6361 7000 Korea 82 2 3473 4460 Mexico 52 555 488 7670 The Netherlands 0318 540666 New Zealand 64 9 415 2280 Norway 23 38 41 30 Poland 48 22 331 99 99 Portugal 351 21 472 7700 Russia 7 495 721 14 04 Singapore 65 6415 3188 South Africa 27 861 246 723 Spain 34 91 590 5200 Sweden 08 555 12700 Switzerland 061 717 95 55 Taiwan 886 2 2578 7189 Thailand 800 88 22 88 United Kingdom 020 8328 2000