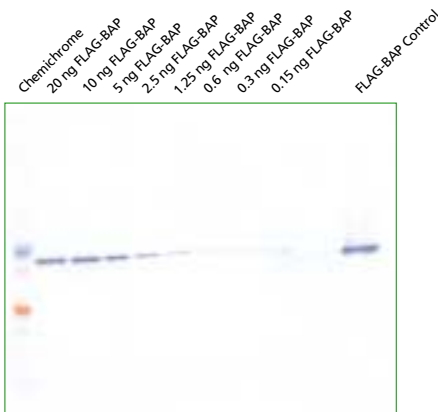


WESTERN BLOTTING



Sigma PVDF membrane (0.15 ng sensitivity)

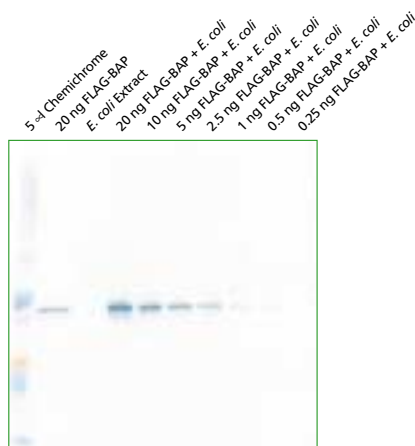
The FLAG[®] BAP control was used to show how a typical Western blot would be performed with a control. 20 to 0.15 ng of FLAG-BAP was detected on PVDF. No other bands besides FLAG-BAP and Chemichrome IgG (heavy chain) band were detected. The FLAG-BAP protein was detected to 0.15 ng.

ProteoQwest™ Kits for Western Blotting

ProteoQwest™ Colorimetric Western Blotting Kit, TMB Substrate, for Mouse Monoclonal IgG Antibodies

ProteoQwest Colorimetric Western Blotting Kit, TMB Substrate is designed for high sensitivity colorimetric detection of as little as 0.15 ng. The kit includes all qualified essential reagents and antibodies used in a Western blot specific for mouse monoclonal IgG antibodies. The colorimetric reaction occurs directly on the membrane. No darkroom or film is needed when performing a Western blot with the ProteoQwest Colorimetric Kit. This kit is designed for 25 mini-gel (10 x 10 cm) blots.

Product Code	Description	Size
PQ0101	ProteoQwest Colorimetric, TMB Substrate	1 kit



The FLAG-BAP control was spiked into an *E. coli* extract and then separated on a 4-20% SDS-PAGE gel along with the Chemichrome western control. The gel was transferred onto a PVDF membrane. The membrane was developed with the anti-FLAG M2 antibody and the reagents for the ProteoQwest Colorimetric Western Blotting Kit with the BCIP/NBT substrate. The FLAG-BAP protein was detected to 0.5 ng with no detection of any *E. coli* proteins.

ProteoQwest™ Colorimetric Western Blotting Kit, BCIP/NBT Substrate, for Mouse Monoclonal IgG Antibodies

ProteoQwest Colorimetric Western Blotting Kit, BCIP/NBT Substrate is designed for high sensitivity colorimetric detection for as little as 0.5 ng. This kit includes all qualified essential reagents and antibodies used in a Western blot specific for mouse monoclonal IgG antibodies. This kit is designed for 25 mini-gel (10 x 10 cm) blots.

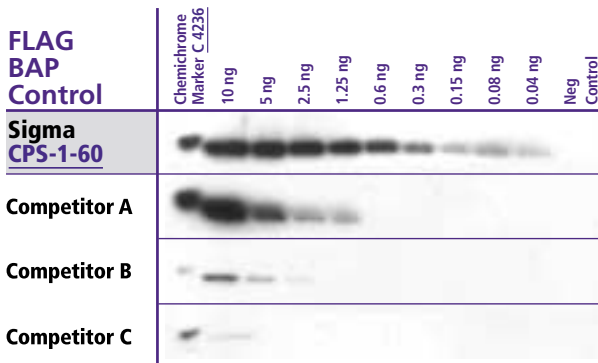
Product Code	Description	Size
PQ0111	ProteoQwest Colorimetric, BCIP/NBT Substrate	1 kit

WESTERN BLOTTING

ProteoQwest™ Chemiluminescent Western Blotting Kit, CPS1 Substrate for Mouse Monoclonal IgG Antibodies

ProteoQwest Chemiluminescent Western Blotting Kit with CPS Substrate is designed for high sensitivity chemiluminescent detection of as little as 0.03 ng of protein. It uses the popular Horseradish Peroxidase (HRP) enzyme and includes essential reagents and antibodies used in a Western blot specific for mouse monoclonal IgG. The chemiluminescent reaction occurs directly on the protein immobilized membrane. This kit is optimized for use with either film or chemiluminescent imagers. All components of the ProteoQwest Chemiluminescent Western Blotting Kit have been extensively tested and optimized to ensure superb results. This kit is designed for 12 mini-gel (10 x 10 cm) blots.

Chemiluminescent detection of a FLAG®-tagged protein (BAP control protein) in an *E. coli* lysate using Sigma CPS-1-60 and the top three competitors' products:



Use 0.125 ml per cm² of membrane.

Product Code	Description	Size
PQ0201	ProteoQwest Chemiluminescent, CPS-1 Substrate for mouse monoclonal IgG Antibodies	Kit
CPS-1-60	Chemiluminescent Peroxidase Substrate	60 ml

ProteoQwest™ Chemiluminescent Western Blotting Kit, CPS Substrate for Rabbit Antibodies

ProteoQwest Chemiluminescent Western Blotting Kit, CPS Substrate is designed for high sensitivity, low background chemiluminescent detection of as little as 0.06 ng of protein. All of the components of this ProteoQwest kit have been extensively tested and optimized. This kit is designed for 12 mini-gel sized (10 x 10cm) blots. It is possible to use this kit for as many as 24 blots if half the suggested amount of reagents is used.

Product Code	Description	Size
PQ0221	ProteoQwest™ Chemiluminescent, CPS Substrate for Rabbit Antibodies	1 kit

ProteoQwest™ Colorimetric Western Blotting Kit, TMB Substrate for Rabbit Antibodies

The ProteoQwest Colorimetric Western Blotting Kit, TMB Substrate is designed for high sensitivity, low background colorimetric detection of as little as 0.25 ng of protein. The colorimetric reaction occurs directly on the PVDF or nitrocellulose membrane; no darkroom or film is needed. All of the components of this ProteoQwest kit have been extensively tested and optimized. This kit is designed for 25 mini-gel sized blots. (10 x 10 cm)

Product Code	Description	Size
PQ0121	ProteoQwest™ Colorimetric, TMB Substrate for Rabbit Antibodies	1 kit



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Antibody Conjugates

Name	Product Code	Features
Anti-Goat IgG Peroxidase Conjugate (whole molecule); Source: Rabbit	A 5420	Binds all goat Igs
Monoclonal Anti-Goat/Sheep IgG Peroxidase Conjugate; Clone No. GT-34, Source: Mouse IgG1	A 9452	Binds goat IgG1 and IgG2, sheep and bovine IgG
Anti-Mouse IgG Peroxidase Conjugate (Fab specific); Source: Goat	A 9917	
Anti-Mouse IgG Peroxidase Conjugate (Fab specific); Source: Goat	A 3682	Binds all mouse Igs. Adsorbed to reduce background staining with the bovine, horse, and human samples
Anti-Mouse IgG Peroxidase Conjugate (Fc specific); Source: Rabbit	A 0168	Binds mouse IgG; does not bind other mouse Igs. Adsorbed to reduce background staining with human samples
Anti-Mouse IgG Peroxidase Conjugate (Fc specific); Source: Rabbit	A 2554	Binds mouse IgG; does not bind other mouse Igs. Adsorbed to reduce background staining with bovine, horse, or human samples
Anti-Mouse IgG Peroxidase Conjugate (whole molecule); Source: Rabbit	A 9044	Binds all mouse Igs
Monoclonal Anti-Rabbit IgG Peroxidase Conjugate (γ -chain specific); Clone No. RG-96, Source: Mouse IgG1	A 1949	Binds rabbit IgG; does not bind other rabbit Igs
Anti-Rabbit IgG Peroxidase Conjugate (whole molecule); Source: Goat	A 9169	Binds all rabbit Igs.
Anti-Rabbit IgG Peroxidase Conjugate (whole molecule); Source: Goat	A 0545	Binds all rabbit IgGs. Adsorbed to reduce background staining with human samples
Monoclonal Anti-Rabbit Immunoglobulins Peroxidase Conjugate; Clone No. RG-16, Source: Mouse IgG1	A 2074	Binds only rabbit Igs. Does not react with reduced rabbit Igs
Protein A Peroxidase Conjugate	P 8651	Binds IgG only from most mammals, except rat, goat, and sheep
Protein G Recombinant Peroxidase Conjugate	P 8170	Binds IgG only from most mammals, except cat; binds chicken IgG
Anti-GST Peroxidase Conjugate; Source: Rabbit	A 7340	IgG fraction from antiserum. By ELISA, the antibody does not recognize GST from rat, rabbit, porcine, or bovine liver or from human placenta
Anti-FLAG M2-Peroxidase Conjugate	A 8592	Especially useful in detection of FLAG fusion proteins expressed in murine host, where secondary anti-mouse antibodies may cause cross-reactivity
Avidin Peroxidase Conjugate; Source: Egg Whites	A 3151	Lyophilized Powder
Avidin Peroxidase Conjugate; Source: Egg Whites	A 7419	Buffered aqueous solution
ExtraAvidin Peroxidase Conjugate; Source: Egg Whites	E 2886	
Streptavidin Peroxidase Conjugate; Source: <i>Streptomyces avidinii</i>	S 5512	
Streptavidin Peroxidase Polymer Conjugate ultra sensitive; Source: <i>Streptomyces avidinii</i>	S 2438	
Anti-Goat IgG AP Conjugate (whole molecule); Source: Rabbit	A 4062	Binds all goat Igs. Adsorbed to reduce background staining with human samples
Anti-Goat IgG AP Conjugate (whole molecule); Source: Rabbit	A 4187	Binds all goat Igs.
Monoclonal Anti-Goat/Sheep IgG AP Conjugate Clone No. GT-34, Source: Mouse IgG1	A 8062	Binds goat IgG1 and IgG2, sheep and bovine IgG
Anti-Mouse IgG AP Conjugate (Fab specific); Source: Goat	A 2197	Binds all mouse Igs. Adsorbed to reduce background staining with bovine, horse, or human samples
Anti-Mouse IgG AP Conjugate (Fab specific); Source: Goat	A 1682	Binds all mouse Igs. Adsorbed to reduce background staining with human or rat samples
Anti-Mouse IgG AP Conjugate (Fc specific); Source: Goat	A 2429	Binds mouse IgG; does not bind other mouse Igs. Adsorbed to reduce background staining with bovine, horse, or human samples
Anti-Mouse IgG AP Conjugate (whole molecule); Source: Goat	A 3562	Binds all mouse Igs.
Monoclonal Anti-Rabbit IgG AP Conjugate (γ -chain specific); Clone No: RG-96, Source: Mouse IgG1	A 2556	Binds rabbit IgG; does not bind other rabbit Igs
Monoclonal Anti-Rabbit Immunoglobulins AP Conjugate; Clone No: RG-16, Source: Mouse IgG1	A 2306	Binds only rabbit Igs. Provides reduces background with human, guinea pig, rat, bovine, turkey, chicken, goat, sheep, horse, dog, pig, or cat samples
Anti-Rabbit IgG AP Conjugate (whole molecule); Source: Goat	A 3687	Binds all rabbit Igs
Anti-Rabbit IgG AP Conjugate (whole molecule); Source: Goat	A 3812	Binds all rabbit Igs. Adsorbed to reduce background staining with human samples
Anti-GST AP Conjugate; Source: Rabbit	A 5838	IgG fraction of antiserum; by ELISA, the antibody does not recognize GST from rat, rabbit, porcine, or bovine liver or from human placenta
Anti-FLAG M2 AP Conjugate;	A 9469	Especially useful in detection of FLAG fusion proteins expressed in murine host, where secondary anti-mouse antibodies may cause cross-reactivity
Protein G AP Conjugate	P 8170	
Avidin AP Conjugate	A 7284	
Extraavidin AP Conjugate Source: Egg Whites	E 2636	
Streptavidin AP Conjugate; Source: <i>Streptomyces avidinii</i>	S 2890	

WESTERN BLOTTING

Substrates for Western Blotting

	Substrate	Color	Product(s)	Product Code(s)	Comments
Peroxidase	TMB	Deep Blue	TMB Liquid Substrate for Membranes	T 0565	TMB (3,3',5,5'-Tetramethylbenzidine) represents a safer, more stable alternative to DAB. TMB develops a permanent, insoluble dark blue reaction product. Product T 0565 is recommended for membrane application, but not ELISA (microwell) procedures. This product is supplied ready-to-use.
	DAB	Brown	Sigma <i>FAST</i> [™] DAB Tablets	D 4418	DAB (3,3'-Diaminobenzidine) is more sensitive than AEC. Sigma FAST DAB tablets have been developed for use in immunohistology as well as Western blotting and require no additional buffers or steps to prepare an active substrate solution. Each tablet set dissolved in 15 ml of deionized water yields a ready-to-use buffered solution containing DAB and urea hydrogen peroxide.
			DAB Liquid Substrate	D 7304	The DAB Liquid Substrate System is recommended for immunohistology as well as Western blotting applications, but not for ELISA (microwell) procedures. DAB Liquid Substrate System includes 25 ml of 10X DAB Liquid Chromagen and 225 ml of ready-to-use buffer/peroxide solution.
			Sigma FAST DAB with Metal Enhancer Tablets	D 0426	DAB with Metal Enhancer offers increased sensitivity over alternative DAB formats. Sigma FAST DAB with Metal Enhancer Tablets require no additional buffers or steps to prepare an active substrate. The DAB reaction is enhanced by the addition of GCl_2 , and produces a more intense stain which is resistant to alcohol. Each tablet set dissolved in 5 ml of deionized water yields a ready-to-use buffered solution.
	CPS	Chemiluminescent	Chemiluminescent Peroxidase Substrate	CPS-1-60 CPS-1-120 CPS-1-300	Chemiluminescent Peroxidase Substrate offers picomole detection, up to 100-fold improvement in signal to noise ratio over other luminol-peroxidase formulations.
AEC	Red	AEC Staining Kit	AEC-101	The AEC (3-amino-9-ethylcarbazole) Staining Kit contains universal reagents for staining peroxidase labeled compounds in Western blotting and immunohistochemistry. AEC produces an insoluble end product. The AEC Kit is not recommended for ELISA (microwell) procedures. Each kit contains 3 ml of concentrated acetate buffer, AEC chromagen and hydrogen peroxide in a dropper bottle for easy dispensing.	
Alkaline Phosphatase	4-Chloro-1-Naphthol	Blue	4-Chloro-1-Naphthol Tablets 4-Chloro-1 Naphthol Solution	C 6788 C 8302	4-chloro-1-naphthol is recommended for Western blotting. This substrate produces an end product that is blue in color and can easily be observed visually.
	Fast Red	Red	Sigma <i>FAST</i> Fast Red Tablets	F 4523	Sigma FAST Fast Red TR/Naphthol AS-MX tablets have been developed for use in immunohistology and Western blotting applications. Sigma <i>FAST</i> Fast Red TR/Naphthol AS-MX tablets contain 0.6 M levamisole to block endogenous alkaline phosphatase activity. Each tablet set dissolved in 10 ml of deionized water yields a ready-to-use buffered solution.
	BCIP/NBT	Purple	BCIP/NBT Liquid Substrate System	B 1911	BCIP/NBT (5-Bromo-4-chloro-3-indolyl phosphate dipotassium/nitrotetrazolium blue chloride) produces an insoluble, dark purple end product for immunohistochemistry and Western blotting applications. BCIP/NBT offers greater sensitivity than Fast Red.
			Sigma <i>FAST</i> BCIP/NBT Tablets	B 5655	The BCIP/NBT Liquid Substrate System is not recommended for ELISA (microwell) procedures. Each BCIP/NBT tablet , when dissolved in deionized water, yields a ready-to-use buffered solution of BCIP/NBT, pH 9.5.
	CDP-Star [™]	Chemiluminescent	CDP-Star Chemiluminescent Substrate Solution	C 0712	CDP-Star, a sensitive, chemiluminescent substrate, allows rapid, reproducible detection of alkaline phosphatase labeled molecules in Northern, Southern, and Western blotting applications. Detection of alkaline phosphatase labeled molecules with CDP-Star is extremely sensitive as a result of low background luminescence coupled with high intensity and prolonged light output from the enzyme catalysis. Maximum light emission occurs at approximately 60 minutes and continues for up to 24 hours, allowing for multiple film exposures and/or sensitive detection of targets present in small amounts. For convenience, CDP-Star is supplied as a 0.24 mM ready-to-use aqueous solution. CDP-Star functions on both neutral and positively charged nylon.

WESTERN BLOTTING

Membranes & Blotting Paper for Western Blotting

Nitrocellulose Membranes

Nitrocellulose membranes are the most popular matrix used in protein blotting. All of the following are suitable for Western blotting. Most proteins can be successfully blotted using a 0.45 μm pore size membrane. For proteins of low molecular weight or peptides, a 0.2 μm pore size membrane is recommended.

Product Code	Description
N 7892	Nitrocellulose Membrane 0.2 μm pore size, 15 x 15 cm
N 8017	Nitrocellulose Membrane 0.2 μm pore size, 20 x 20 cm
N 8142	Nitrocellulose Membrane 0.45 μm pore size, 7 x 10 cm
N 8267	Nitrocellulose Membrane 0.45 μm pore size, 15 x 15 cm
N 8392	Nitrocellulose Membrane 0.45 μm pore size, 20 x 20 cm

Immobilon™-P PVDF Membranes

Immobilon-P PVDF (Polyvinylidene Difluoride) membranes have been optimized for Western blotting and offer better handling and staining than nitrocellulose. All Immobilon-P PVDF membranes have a pore size of 0.45 μm .

Product Code	Description
P 2438	Immobilon-P PVDF Membrane 9 x 12 cm
P 4188	Immobilon-P PVDF Membrane 10 x 10 cm
P 2563	Immobilon-P PVDF Membrane 15 x 15 cm
P 2813	Immobilon-P PVDF Membrane 26 x 26 cm
P 2938	Immobilon-P PVDF Membrane 26.5 cm x 3.75 m

QuickDraw™ Blotting Paper

QuickDraw blotting paper is used for Northern, Southern, and Western blots. Extra-thick paper is ideal for Western blotting to sandwich the gel and the membrane. The thick paper may be used as a filter support for dot blots. Medium thickness paper is suitable for use as a wick during transfers. QuickDraw paper is available in a variety of sizes to meet your needs.

Product Code	Description
P 6664	Blotting Paper, Medium-Thick, 20 x 20 cm
P 6914	Blotting Paper, Medium-Thick, 30 x 30 cm
P 9039	Blotting Paper, Medium-Thick, 33 x 56 cm
P 9164	Blotting Paper, Thick, 33 x 56 cm
P 6928	Blotting Paper, Extra-Thick, 7 x 8 cm
P 7796	Blotting Paper, Extra-Thick, 7 x 10 cm
P 8046	Blotting Paper, Extra-Thick, 10 x 15 cm
P 6803	Blotting Paper, Extra-Thick, 11 x 14 cm
P 8549	Blotting Paper, Extra-Thick, 14 x 20 cm
P 7921	Blotting Paper, Extra-Thick, 15 x 15 cm
P 8171	Blotting Paper, Extra-Thick, 20 x 20 cm
P 7176	Blotting Paper, Extra-Thick, 20 x 25 cm