

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 FAST™ 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 FAST 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 FAST 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 Sigma FAST BCIP/NBT Tablets	B 1911 B 5655	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. 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.	