

DyLight™ Fluorescent Protein Molecular Weight Markers

One- or two-color fluorescent detection with one protein molecular weight marker

DyLight™ Fluorescent Protein Molecular Weight Markers† are optimized for direct visualization of marker proteins after sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE). Each protein in the mixture is double-labeled with DyLight™ 547 and DyLight™ 647 Fluorescent Dyes to provide flexible one- or two-color detection with common imaging systems (Figure 1). The markers are compatible with Western blotting (Figure 2) and can be detected by virtually any in-gel staining method (Figure 3). The DyLight™ Fluorescent Protein Molecular Weight Markers consists of nine proteins with molecular weights in the range of 6 K to 200 K.

Fluorescent and Colorimetric Detection of DyLight™ Fluorescent Protein Molecular Weight Markers

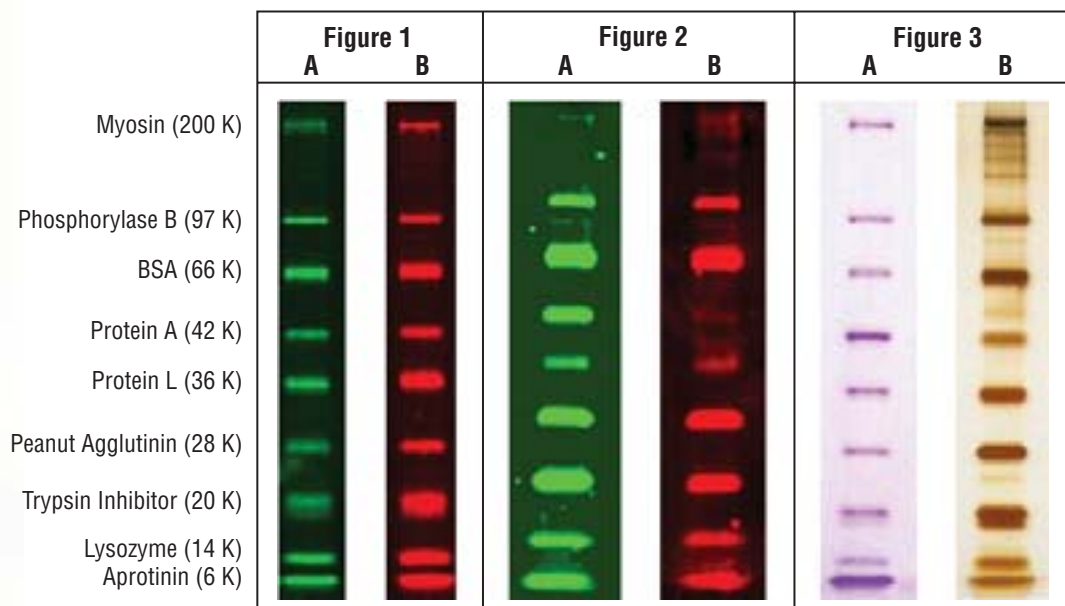
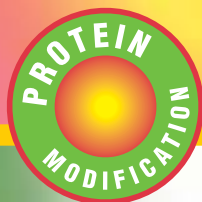


Figure 1. Direct in-gel fluorescent detection. Marker proteins (5 µl) were separated in 4-20% Tris-glycine gels. The gels were imaged with the Kodak Image Station 2000MM using a five-minute exposure at f2.8 with the **A.** 535/600 nm excitation/emission filter set or **B.** 625/700 nm excitation/emission filter set.

Figure 2. Fluorescent Western blot detection. Marker proteins (5 µl) were separated in 4-20% Tris-glycine gels and transferred to **A.** nitrocellulose or **B.** PVDF membrane. Blots were imaged with the Typhoon® 9410 at 500V PMT using the **A.** Cy3™ Dye or **B.** Cy5™ Dye laser settings.

Note: Proteins in the marker mix produce uniform fluorescent intensities in SDS-PAGE applications; however, variations in protein-transfer efficiency affect fluorescent intensity. For example, high molecular weight proteins, such as myosin (200 K), typically transfer less efficiently than low molecular weight proteins.

Figure 3. Colorimetric in-gel detection. Marker proteins (10 µl) were separated in 4-20% Tris-glycine gels and stained with **A.** Imperial™ Protein Stain† or **B.** silver stain.



Highlights:

- **Easily multiplexed** – two excitation and emission maxima enable one- or two-color fluorescent detection
- **Easy to use and convenient** – eliminate the need for awkward marking or overlay procedures
- **Fluorescent and colorimetric** – two detection options available: in-gel or on-membrane
- **Instrument-compatible** – DyLight™ Dye spectra are compatible with common imaging systems
- **Photostable** – allows long exposure times for maximum sensitivity

Table 1. Spectral characteristics of DyLight™ Fluorescent Protein Molecular Weight Markers.

	Excitation (nm)	Emission (nm)	Extinction Coefficient (min)
DyLight™ 547 Dye	557	570	150,000 M ⁻¹ cm ⁻¹
DyLight™ 647 Dye	652	673	250,000 M ⁻¹ cm ⁻¹

Table 2. Recommended instruments for in-gel and Western Blotting detection using DyLight™ Dyes.

Company	Instrument	Excitation (nm)	Emission (nm)	DyLight™ 547 Dye	DyLight™ 647 Dye
Kodak	Image Station 2000MM ¹	535/625	600/700	✓	✓
	Image Station 4000MM	535/625	600/700	✓	✓
Bio-Rad	Molecular Imager® FX (FX Pro)	532/635	605/695	✓	✓
Amersham	Typhoon® 9410 ¹	532/633	580/670	✓	✓
	Typhoon® 9400	532/633	580/670	✓	✓
	Typhoon® 9210	532/633	580/670	✓	✓
	Typhoon® 9200	532/633	580/670	✓	✓
	Storm® 830	635	670	Not compatible	✓
	Storm® 860	635	670	Not compatible	✓
Fuji	FLA-3000	532/633	570/675	✓	✓
	FLA-5100	532/633	570/675	✓	✓
	FLA-8000	532/633	570/675	✓	✓

1. DyLight™ Dye performance has been evaluated with this instrument. Compatibility of other instruments is based on manufacturer's specifications.

Ordering Information

Product #	Description	Pkg. Size
26665	DyLight™ Fluorescent Protein Molecular Weight Markers <i>Sufficient material for loading 50 gel lanes.</i>	250 µl

Complementary Products

Product #	Description	Pkg. Size
31010	DyLight™ 547 Fluor, Goat Anti-Mouse IgG (H + L) Conjugated	1 ml (1 mg/ml)
31015	DyLight™ 647 Fluor, Goat Anti-Mouse IgG (H + L) Conjugated	1 ml (1 mg/ml)
31020	DyLight™ 547 Fluor, Goat Anti-Rabbit IgG (H + L) Conjugated	1 ml (1 mg/ml)
31025	DyLight™ 647 Fluor, Goat Anti-Rabbit IgG (H + L) Conjugated	1 ml (1 mg/ml)
21424	DyLight™ 547 Fluor, Streptavidin Conjugated	1 ml (1 mg/ml)
21824	DyLight™ 647 Fluor, Streptavidin Conjugated	1 ml (1 mg/ml)
24615	Imperial™ Protein Stain <i>Sufficient reagent to stain up to 50 mini-gels (8 cm x 10 cm).</i>	1 liter
24617	Imperial™ Protein Stain <i>Sufficient reagent to stain up to 150 mini-gels (8 cm x 10 cm).</i>	3 x 1 liter
24612	SilverSNAP® Stain Kit II	Kit

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†Patent pending on Dual-labeled Fluorescent Molecular Weight Marker Technology. US patent pending on Imperial™ Protein Stain Technology.
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