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LIFE SCIENCES

CERTIFICATE OF ANALYSIS

Spectra™ Multicolor High Range Protein Ladder

#SM1851 2 x 250 µl

(for 50 mini gel applications 10 µl per well or
25 large gel applications 20 µl per well)

Lot: **Expiry Date:**

Storage: stable at 4°C for up to 3 months.
For long term storage, store at -20°C.

In total 2 vials.

ISO 9001 ISO 14001
www.fermentas.com

Description

Spectra™ Multicolor High Range Protein Ladder is designed specifically for large protein analysis. It is a mixture of 8 recombinant, highly purified proteins with apparent molecular weights of 40 to 300 kDa. The proteins are individually prestained using three different dyes. Lot-to-lot variation of the apparent molecular weight of prestained proteins is ~5%.

The Spectra™ Multicolor High Range Protein Ladder is ready-to-use: no heating, further dilution or addition of a reducing agent is required before use.

Applications

- Monitoring of protein migration during SDS-PAGE (1).
- Verifying Western transfer efficiency (2-4).
- Approximate sizing of proteins on SDS-polyacrylamide gels and Western blots.
- Locating a protein of interest for excision from an unstained preparative gel.

Storage Buffer

62.5 mM Tris-H_3PO_4 (pH 7.5 at 25°C), 1 mM EDTA, 2% (w/v) SDS, 10 mM DTT, 1 mM NaN_3 and 33% (v/v) glycerol.

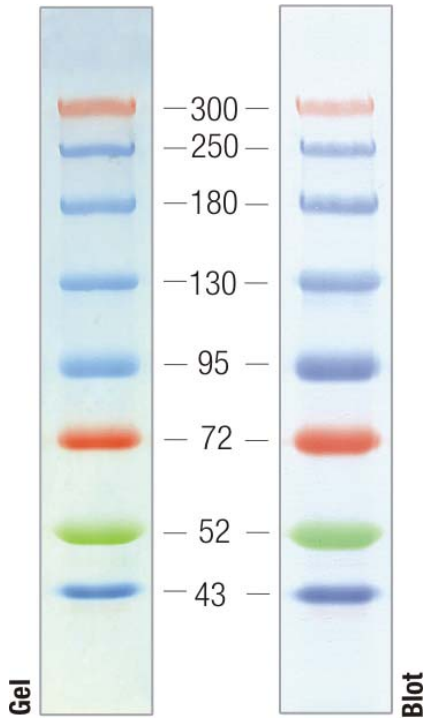
Recommendations for Loading

1. Thaw the ladder at room temperature for a few minutes to dissolve precipitated solids. **Do not boil!**
2. Mix gently, but thoroughly, to ensure that the solution is homogeneous.
3. Load the following volumes of the ladder on an SDS-polyacrylamide gel:
   – 10 µl per well for mini gel,
   – 20 µl per well for large gel.
   Use the same volumes for Western blotting.
   The loading volumes listed above are recommended for gels with a thickness of 0.75 mm. The loading volume should be doubled for 1.5 mm thick gels.

Important Note

- Longer transfer times or higher transfer voltages may be required for Western blotting of large (>100 kDa) proteins.
- Prestained proteins can have different mobilities in various SDS-PAGE-buffer systems. However, they are suitable for approximate molecular weight determination when calibrated against unstained standards in the same system. *See* reverse page for migration patterns in different electrophoresis conditions.

Representative lot of Spectra™ Multicolor High Range Protein Ladder, apparent MW, kDa



4-12% Tris-glycine SDS-PAGE

QUALITY CONTROL

10 µl of Spectra™ Multicolor High Range Protein Ladder provide 8 individual bands in SDS-PAGE (Tris-glycine buffer) and after electrophoretic transfer from the gel onto PVDF membrane.

Quality authorized by: Jurgita Zilinskiene

(continued on back page)

Migration Patterns of Spectra™ Multicolor High Range Protein Ladder

Gel type	Tris-Glycine						Tris-Acetate*		Bis-Tris*
Gel concentration	4-12%	4%	6%	8%	10%	4-20%	3-8%	7%	4-12%
Running buffer	Tris-Glycine						Tris-Acetate		MOPS
	Apparent Molecular Weights, kDa								
% lenght of gel									
10	300	300	300	300	300	300	270	270	270
20	250		250	250	250	250	205	205	185
30	180		180	180	180	180	150	150	140
40	130	250	130	130	130	130	120	120	115
50	100		100	100	100	100		85	80
60	70	180	70	70	70	70	85	65	65
70	50		50	50	50	50	65	50	50
80	40	130	40	40	40	40	50	40	40
90							40		
100		100							

* migration patterns were determined using NuPAGE® precast gels.

References

1. Laemmli, U.K., Cleavage of structural proteins during the assembly of the head of bacteriophage T4, Nature, 227, 680-685, 1970.
2. Burnette, W.N., "Western blotting": electrophoretic transfer of proteins from sodium dodecyl sulfate – polyacrylamide gels to unmodified nitrocellulose and radiographic detection with antibody and radioiodinated protein A, Anal. Biochem., 112 (2), 195-203, 1981.
3. Towbin, H., et al., Electrophoretic transfer of proteins from polyacrylamide gels to nitrocellulose sheets: procedure and some applications, Proc. Natl. Acad. Sci. USA, 76, 4350-4354, 1979.
4. Kurien, B.T. and Scofield, R.H., Protein blotting: a review, J. Imm. Meth., 274, 1-15, 2003.

PRODUCT USE LIMITATION.

This product is developed, designed and sold exclusively *for research purposes and in vitro use only*. The product was not tested for use in diagnostics or for drug development, nor is it suitable for administration to humans or animals.

Please refer to www.fermentas.com for Material Safety Data Sheet of the product.