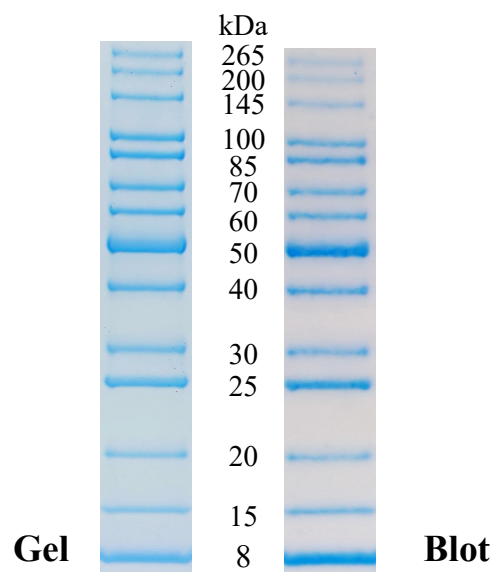


X-Biotech™ Unstained Protein Ladder

1. Product Basic Information

Item	Specification
Cat. No.	X10139
Product Size	500 μL × 2
MW Range	8–265 kDa
Band Number	14
Storage	4°C for 2 months -20°C for 2 years
Storage Buffer	20 mM Tris-H ₃ PO ₄ (pH 7.5), 2 mM EDTA, 2% (W/V) SDS, 15% (W/V) Glycerol, 2 mM DTT, 4 M Urea, 0.1% (V/V) Proclin 300, 0.01% Bromophenol blue



4-20% Tris-Glycine SDS-PAGE

2. Product Basic Information

This product is a rigorously tested unstained protein ladder, which can be used for the calibration of pre-stained protein ladder. The X-biotech™ Unstained Protein Ladder is a ready to use unstained mixture of 14 recombinant proteins ranging from 8 kDa to 265 kDa. The ladder is visualized by SDS-PAGE using coomassie or detected in Western blots with protein stains. It features the following key characteristics:

• Ready-to-Use Convenience

For easy reference, the 8 kDa, 25 kDa and 50 kDa protein bands have a greater intensity than the other proteins in the ladder. The protein ladder is conveniently packaged and ready to use with no heating, diluting or additional reducing agent necessary.

• Calibration Basis

The indicated apparent molecular weights are calibrated against unstained protein ladders from standard manufacturers, including *Bio-Rad Laboratories* (Cat. No. 1610363) and *Thermo Fisher Scientific* (Cat. No. 26614 and Cat. No. 26632).

• Core Applications

1. Monitoring protein separation processes during SDS-PAGE electrophoresis.
2. Verifying Western blot transfer efficiency on membranes (PVDF or nitrocellulose membranes).
3. Approximating the molecular weight of target proteins on gels or blots.

• Shipping Condition

Transport with ice bag (4-8°C).

Note: Upon receipt of the product, please store it at -20°C promptly.

3. Recommended Experimental Procedures

3.1 Thawing and Preparation

Thaw the ladder at room temperature until completely dissolved (to redissolve any precipitated solids).

Gently but thoroughly mix the solution to ensure homogeneity.

Critical Warning: Do not heat the product above room temperature.

3.2 Recommended loading volumes

When performing polyacrylamide gel electrophoresis (SDS-PAGE), load an appropriate volumes of the ladder on an SDS-polyacrylamide gel:

- Mini gel electrophoresis: 5 μ L per well
- Large gel electrophoresis: 10 μ L per well

Use the same volumes for Western blotting.

The loading volumes listed above are recommended for gels with a thickness of 0.75-1.0 mm.

The loading volume should be doubled for 1.5 mm thick gels.

4. Key Notes and Precautions

4.1 Electrophoresis-Related Notes

1. In gels with a concentration <10%, low-molecular weight proteins in the ladder may migrate with the dye front.
2. Western Blot for Large Proteins (>100 kDa):
 - Extend transfer time or increase transfer voltage to ensure complete transfer.
 - SDS in Transfer Buffer: It is recommended to avoid adding SDS. If necessary for the experiment, the concentration must not exceed 0.02-0.04%.

4.2 Usage Restriction

For Research Use Only: This product is strictly for laboratory research purposes and not approved for diagnostic procedures (e.g., clinical sample testing, disease diagnosis).