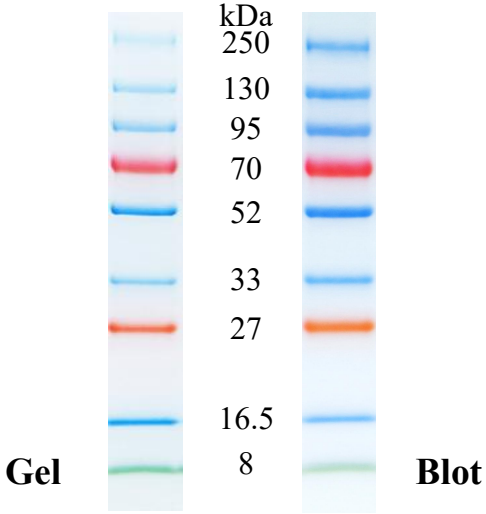
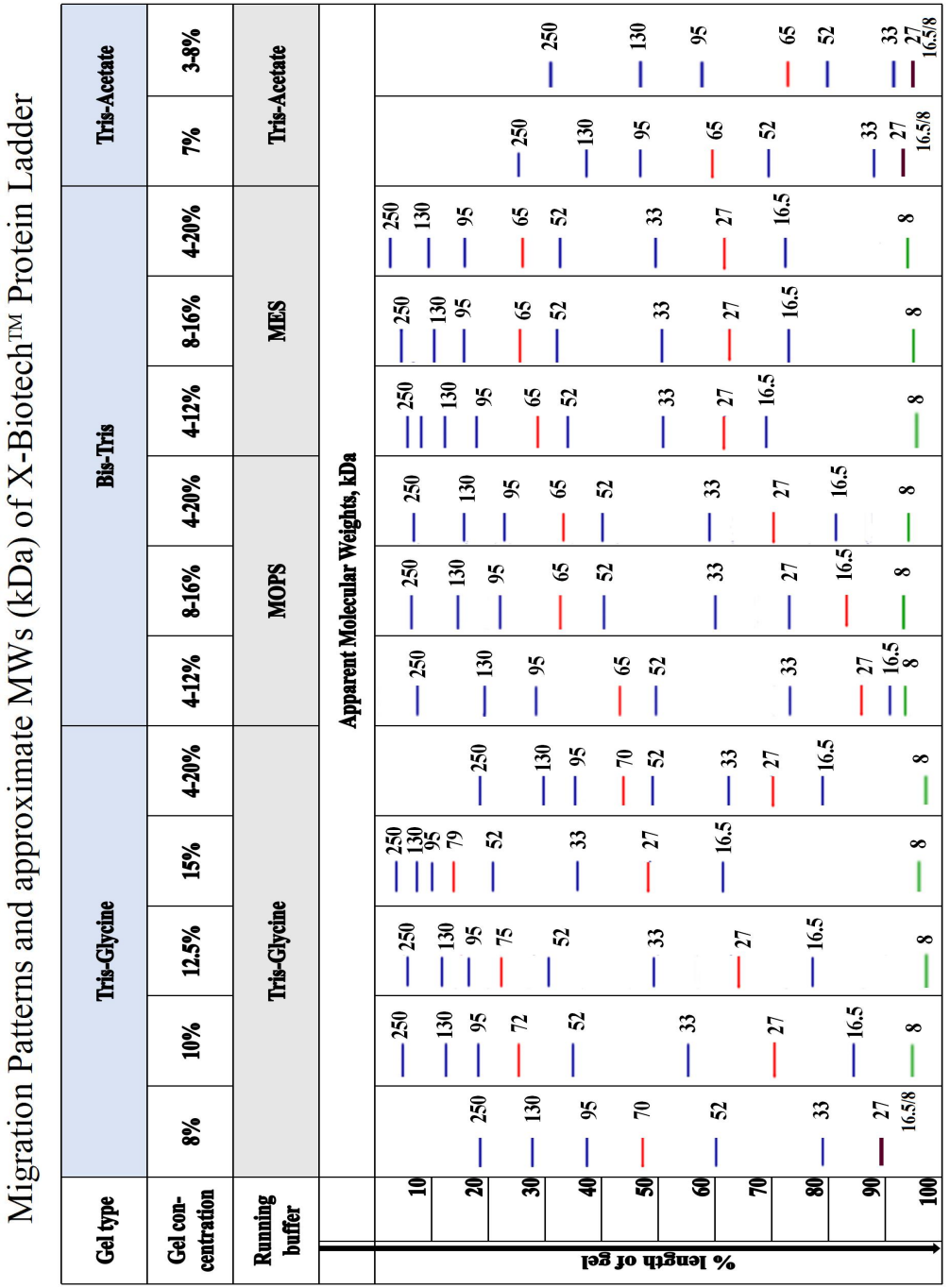
X-Biotech™ Pre-stained Protein Ladder

1.Product Basic Information

Item	Specification
Cat. No.	X10119
Product Size	250 μL × 2
MW Range	8－250 kDa
Band Number	9
Storage	4°C for 2 months -20°C for 2 years
Storage Buffer	20 mM Tris-PO4 (pH 7.5), 2 mM EDTA.2 Na, 4 M Urea, 2 mM DTT,1.5% (W/V) SDS, 15% (V/V) Glycerol, 0.1% (V/V) Proclin 300



4-20% Tris-Glycine SDS-PAGE



2.Product Basic Information

The X-biotech™ Pre-stained Protein Ladder is a ready to use pre-stained mixture of 9 recombinant proteins ranging from 8 kDa to 250 kDa. It features the following key characteristics:

·Pre-stained Design

Four different chromophores are bound to the proteins, producing a brightly colored ladder. When separated by SDS-PAGE, most proteins exhibit a blue color, except for three reference bands: **70 kDa (orange-red), 27(orange) and 8 kDa (green)**.

·Ready-to-Use Convenience

No additional steps (e.g., heating, dilution, or adding reducing agents) are required before use.

·Calibration Basis

The indicated apparent molecular weights are calibrated against unstained protein ladders from standard manufacturers, including *X-Biotech™ Protein Ladder (Cat. No. X10139)*, *Bio-Rad Laboratories (Cat. No. 1610363)* and *Thermo Fisher Scientific (Cat. No. 26614)*.

·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℃).
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 µL per well
- Large gel electrophoresis: 10 µL 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%.

3.Pre-stained proteins may show different apparent molecular weights in different SDS-PAGE buffer systems. For accurate approximate molecular weight determination:

- Calibrate with unstained proteins in the same buffer system in advance.
- Refer to the attached "Mobility Table" for migration patterns under different electrophoresis conditions.

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).

5.Migration Patterns and Apparent Molecular Weights (kDa)

The apparent molecular weights under different gel types, gel concentrations, and running buffer conditions can be referenced in the "Migration Patterns and approximate MWs (kDa) of X-Biotech™ Protein Ladder".