INSTRUCTIONS

PageRuler™ Unstained Protein Ladder

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26614

Number	Description
26614	**PageRuler Unstained Protein Ladder,** 2 × 250µL

Storage Buffer: 62.5mM Tris•H_3PO_4 (pH 7.5 at 25°C), 1mM EDTA, 2% (w/v) SDS, 10mM DTT, 1mM NaN_3 0.01% (w/v) bromophenol blue and 33% (v/v) glycerol.

Storage: Upon receipt store at -20°C. Product is shipped with an ice pack.

Introduction

The Thermo Scientific PageRuler Unstained Protein Ladder consists of a mixture of 14 recombinant, highly purified proteins ranging from 10kDa to 200kDa. The ladder is visualized by SDS-PAGE using coomassie or silver stains or detected in Western blots with protein stains. For easy reference, the 50kDa protein band has a greater intensity than the other proteins in the ladder (see website for product images). The protein ladder is conveniently packaged and ready to use with no heating, diluting or additional reducing agent necessary.

Important Product Information

- Do not boil the protein ladder.
- In high-percentage gels (14-18%), large proteins (150-200kDa) may not separate.
- In low-percentage gels (4-8%), low-molecular weight proteins may migrate with the dye front.
- The large proteins (> 100kDa) in the ladder may require longer transfer times or higher transfer voltages for Western blotting.
- If additional bands appear in the protein ladder, add newly prepared dithiothreitol (DTT) solution to 100mM final concentration. DTT oxidation in the storage buffer can cause the appearance of additional bands.

Procedure for Using the Protein Ladder in Polyacrylamide Gel Electrophoresis

1. Thaw the ladder at room temperature. Do not boil protein ladder.
2. Mix the solution gently and thoroughly to ensure it is homogeneous.
3. Load an appropriate volume of the ladder on the gel.
   - Mini-gel: 5µL per well (0.75-1.0mm thick) or 10µL per well (1.5mm thick)
   - Midi gel: 10µL per well (0.75-1.0mm thick) or 20µL per well (1.5mm thick)

   Note: Dilute the ladder approximately 1/10 in reducing sample buffer for silver staining.
4. Return the unused protein ladder to -20°C for up to one year.

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Related Products

Please see the catalog or website for a complete listing of protein gels and Western blotting products.

26616	**PageRuler Prestained Protein Ladder,** 2 × 250µL
26619	**PageRuler Plus Prestained Protein Ladder,** 2 × 250µL
26630	**PageRuler Broad Range Unstained Protein Ladder,** 2 × 250µL
26632	**PageRuler Low Range Unstained Protein Ladder,** 2 × 250µL
26634	**Spectra™ Multicolor Broad Range Protein Ladder,** 2 × 250µL
26625	**Spectra Multicolor High Range Protein Ladder,** 2 × 250µL
26628	**Spectra Multicolor Low Range Protein Ladder,** 250µL
LC5615	**iBright™ Prestained Protein Ladder**
84786	**SuperSignal™ Enhanced Molecular Weight Protein Standards,** 250µL
XP04200BOX	**Novex™ Tris-Glycine protein gels** (see thermofisher.com/proteingels for a complete listing)
NW04120BOX	**Bolt™ Bis-Tris Plus protein gels** (see thermofisher.com/proteingels for a complete listing)
24615	**Imperial™ Protein Stain,** 1L
LC6060	**SimplyBlue™ SafeStain**

General References

Alegria-Schaffer, A., *et al*. (2009). Performing and optimizing Western blots with an emphasis on chemiluminescent detection. *Methods Enzymol* **463:**573-99.

Burnette, W.N. (1981). "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.

Kurien, B.T. and Scofield, R.H. (2003). Protein blotting: a review. *J Imm Meth* **274:**1-15.

Laemmli, U.K. (1970). Cleavage of structural proteins during the assembly of the head of bacteriophage T4. *Nature* **227:**680-5.

Towbin, H., *et al.* (1979). Electrophoretic transfer of proteins from polyacrylamide gels to nitrocellulose sheets: procedure and some applications. *Proc Natl Acad Sci USA* **76:**4350-4.