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ProductInformation

Ultra Low Range Molecular Weight Marker
(M.W. 1,060–26,600)

Catalog Number **M3546**
Storage Temperature –20 °C

Product Description

The Ultra Low Range Molecular Weight Marker is designed for use in the Schägger and von Jagow Tris-tricine SDS-PAGE method.[1] The marker has been formulated to yield bands of approximately equal intensity when stained with Brilliant Blue G. A 10 ml vial of 2× Sample Buffer (Catalog Number S3047) is also included.

Each vial of marker contains 200 µl of a mixture of six peptides and proteins (see Table 1) in 100 mM Tris-HCl, pH 8.5, 4 mM EDTA, 3 mM sodium azide, and 40% glycerol.

The 2× Sample Buffer is a solution of 100 mM Tris-HCl, pH 6.8, 1% SDS, 4% 2-mercaptoethanol, 0.02% Brilliant Blue G, and 24% glycerol.

Table 1.
Peptide and Protein Mixture in M3546

Peptide/Protein	Molecular Mass (Da)
Triosephosphate Isomerase from rabbit muscle	26,600
Myoglobin from horse heart	17,000
α-Lactalbumin from bovine milk	14,200
Aprotinin from bovine lung	6,500
Insulin Chain B, oxidized, bovine	3,496
Bradykinin	1,060

One vial is sufficient for

400 applications on a standard gel (16 × 14 cm)
800 applications on a mini-gel (10 × 10 cm)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Prepare 1× Sample Buffer by diluting the 2× Sample Buffer 2-fold with water.

Dilute the Ultra Low Range Molecular Weight Marker 20-fold with 1× Sample Buffer. Store in aliquots at –20 °C.

Storage/Stability

Store the product at –20 °C.

Procedure

Heat an aliquot of the diluted marker at 65 °C for 2 minutes.

Recommended sample volumes:
standard size gel (16 cm × 14 cm) – 10 µl/well
mini-gel (10 cm × 10 cm) 5 µl/well

Recommended gel percentages: 16.5% Tris-tricine and 10-20% Tris-tricine

Recommended running buffer: Tris-Tricine-SDS Buffer 10× (Catalog Number T1165) diluted 10-fold with water for a final 1× working concentration.

Gel staining:
Method 1 – Glutaraldehyde fixing is recommended to prevent the two lower molecular mass polypeptides from diffusing out of the gel. Method 1 requires longer time for washing and destaining than Method 2.

1. Wash the gel for 5–10 minutes in water to help decrease the background staining.
2. Fix the gel in a freshly prepared 5% glutaraldehyde solution (Catalog Number G5882) for 1 hour.
3. Wash the gel with water for 5 minutes, repeating three times.
4. Stain the gel in 0.025% Brilliant Blue G (Catalog Number B0770) in 10% acetic acid for 1 hour.
5. Destain the gel in 10% acetic acid for 1 hour to overnight with several changes of destaining solution.

Method 2 – The two lower molecular mass polypeptides are not completely fixed with this method and may diffuse out of the gel if the fixing, staining, and destaining times are greatly exceeded. This method is faster than Method 1.

1. Fix the gel in 40% methanol/10% acetic acid for 30 minutes.
2. Stain the gel in 0.025% Brilliant Blue G (Catalog Number B0770) in 10% acetic acid for 1 hour.
3. Destain the gel in 10% acetic acid with several changes of destaining solution for 1 hour.

References

Schägger, H., and von Jagow, G., Anal. Biochem., **166**, 368-379 (1987).

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