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Product Information

SigmaMarker™

High Range, Molecular Weight 36,000–200,000 Da
Catalog Number **S8320**
Low Range, Molecular Weight 6,500–66,000 Da
Catalog Number **M3913**
Wide Range, Molecular Weight 6,500–200,000 Da
Catalog Number **S8445**

Storage Temperature 2–8 °C

TECHNICAL BULLETIN

Product Description

High, Low, and Wide Range SigmaMarker™ protein standards are specially designed for use in the PhastSystem™ electrophoresis workstation and in standard Laemmli SDS-PAGE systems. The High Range SigmaMarker contains seven proteins from 36–200 kDa. The Low Range SigmaMarker contains eight proteins from 6.5–66 kDa. The Wide Range SigmaMarker contains twelve proteins from 6.5–200 kDa (see Table 2). When using the Wide Range SigmaMarker, gradient gels are recommended.

Reconstitution with 100 µL of deionized water results in a solution containing 2–3.5 mg of protein per ml of 62 mM Tris-HCl, pH 6.8, 1 mM EDTA, 4% sucrose, 0.5% dithiothreitol, 2% SDS, and 0.005% bromophenol blue.

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

1. To prepare the SigmaMarker for application to gels that will be stained with Brilliant Blue, reconstitute each vial with 100 µL of deionized water. Vortex for a few seconds to ensure the material is completely dissolved. Immediately aliquot and freeze the unused portions.
   Note: Heating of the reconstituted marker is not recommended.
2. To prepare the SigmaMarker for application to gels that will be silver stained, dilute the marker reconstituted for gels to be stained with Brilliant Blue (step 1) 50-fold with 20% glycerol solution.

Storage/Stability

Store the lyophilized powder desiccated at 2–8 °C. After reconstitution, store below –20 °C. Repeated freezing and thawing of reconstituted SigmaMarkers is not recommended.

Procedure

Select an appropriate marker loading volume specific for the type of gel system to be used (see Table 1).
Note: For complete separation of the low molecular weight protein standards, it is recommended to use a 4–20% gradient gel or a homogeneous gel of greater than 15%.

Table 1.
Recommended Marker Volumes for Various Gel Systems

Gel System	Recommended Marker Volume
PhastGel® Medium	1 µL
SDS-Laemmli Mini gel (10 × 8 cm)	3–5 µL
SDS-Laemmli Large gel (18 × 16 cm)	5–10 µL

References

1. Laemmli, U.K., Nature, **227**, 680 (1970).

Table 2.
Molecular Weights

Protein	Molecular Weight (Da)	High Range (S8320)	Wide Range (S8445)	Low Range (M3913)
Myosin from porcine heart	200,000	X	X	
β-Galactosidase from *E. coli*	116,000	X	X	
Phosphorylase b from rabbit muscle	97,000	X	X	
Albumin, bovine serum	66,000	X	X	X
Glutamic Dehydrogenase from bovine liver	55,000	X	X	
Ovalbumin from chicken egg	45,000	X	X	X
Glyceraldehyde-3-phosphate Dehydrogenase from rabbit muscle	36,000	X	X	X
Carbonic Anhydrase from bovine erythrocytes	29,000		X	X
Trypsinogen from bovine pancreas	24,000		X	X
Trypsin Inhibitor from soybean	20,000		X	X
α-Lactalbumin from bovine milk	14,200		X	X
Aprotinin from bovine lung	6,500		X	X

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