FastRuler Low Range DNA Ladder, ready-to-use

Catalog Number SM1103

Pub. No. MAN0013027 **Rev.** D00

WARNING! Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from **thermofisher.com/support.**

Contents and storage

Cat. No.	Contents	Amount	Storage
SM1103	FastRuler™ Low Range DNA Ladder, ready-to-use	2 x 500 µL	at room temperature or at 4 °C for periods up to 24 months.*
	6X MassRuler™ DNA Loading Dye	1 mL	

**For longer periods store at -20 °C.*

Description

Thermo Scientific™ FastRuler™ Low Range DNA Ladder is specially designed for fast sizing and quantification of double-stranded DNA in 48-well (or 96-well) gels as well as in conventional agarose gels.
The Ladder consists of five blunt-end chromatography purified individual DNA fragments (in base pairs): 1500, 850, 400, 200 and 50, mixed in equal quantities. The ladder bands are easily resolved after an 8-14 min run on appropriate agarose gels in a short 10-20 mm linear separation distance and visualized by ethidium bromide or SYBR™ Green I staining.
The Ladder is premixed with a loading buffer and can be applied directly onto an agarose gel.

Storage and Loading Buffer

10 mM Tris-HCl (pH 7.6), 10 mM EDTA, 0.005 % bromophenol blue and 10 % glycerol.

6X Thermo Scientific™ MassRuler™ DNA Loading Dye

10 mM Tris-HCl (pH 7.6), 0.03 % bromophenol blue, 60 % glycerol and 60 mM EDTA.

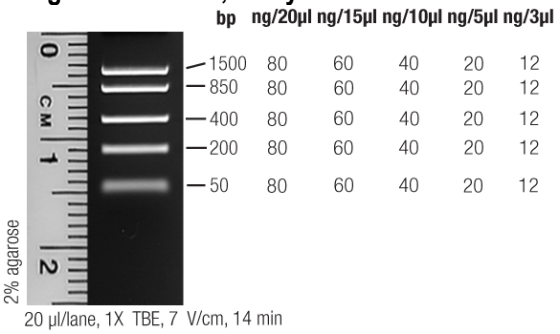
Protocol for Loading

Step 1: Mix gently
Step 2: Load 1 µL per 1 mm gel lane

Recommendations

- Do not heat before loading.
- For sizing:
  - dilute your DNA sample with the MassRuler DNA Loading Dye (#R0621, supplied with the Ladder): mix 1 volume of the dye with 5 volumes of the DNA sample;
  - load equal volumes of the Ladder and an experimental sample;
- For quantification:
  - adjust the concentration of your sample such that the expected amount of material loaded is approximately equal to that of a DNA Ladder band of a nearest size.
- For DNA band visualization with SYBR™ Green and other intercalating dyes, do not add the dyes into the sample, use gel staining after electrophoresis or include dyes into agarose gel to avoid aberrant DNA migration.
- **Important note:** For DNA bands visualization with GelRed™ use gel staining after electrophoresis to avoid aberrant DNA migration.

Amount of DNA (ng) in each band of FastRuler™ Low Range DNA Ladder, ready-to-use



Note

The apparent intensity of bands containing equal ng quantities of DNA may differ in different horizontal sections of gel (diminishes from top to bottom). This effect derives from higher diffusion rates of the shorter fragments, resulting in the lower compactness and lower peak intensity of the corresponding bands. Among factors effecting the severity of this effect are: temperature (the lower the better), overall duration of an electrophoretic and staining procedure (shorter), gel percentage (higher). The time course of DNA fragments separation is presented in the Fig.1.

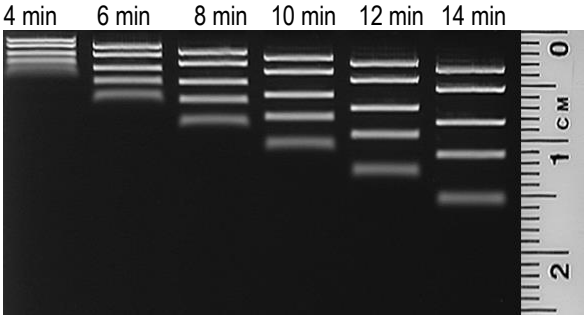


Fig 1. Time course of band separation.
Electrophoresis conditions: 2 % agarose, 1X TBE, 7 V/cm.

Revision history: Pub. No. MAN0013027

Revision	Date	Description
D00	2025-04-08	Extended storage at room temperature to 24 months

Limited product warranty

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