O'RangeRuler 20 bp DNA Ladder, ready-to-use

Catalog Number SM1323

Pub. No. MAN0013046 **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
SM1323	O'RangeRuler™ 20 bp DNA Ladder, ready-to-use	50 µg (for 50-100 applications), 0.1 µg/µL	at room temperature or at 4 °C for periods up to 24 months.*
	6X Orange DNA Loading Dye	1 mL	

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

Description

Thermo Scientific™ O'RangeRuler™ 20 bp DNA Ladder is designed for precise sizing of PCR products and other double-stranded DNA fragments in high percentage agarose or non-denaturing polyacrylamide gels. It is a 20 bp step ladder especially useful for determining 20 bp differences between DNA fragments. The ladder consists of purified and ligated blunt-end basic unit repeats of 20 bp, and it is not suitable for DNA quantification on the gel. The ladder contains the following 15 discrete fragments (in base pairs): **300**, 280, 260, 240, 220, **200**, 180, 160, 140, 120, **100**, 80, 60, 40, and 20. The brighter bands (100, 200 and 300 bp) serve as reference bands.
The ladder is ready to use – it is premixed with the 6X Orange DNA Loading Dye for direct loading on gels.

Storage and Loading Buffer

10 mM Tris-HCl (pH 7.6), 10 mM EDTA, 0.025 % orange G, 0.005 % xylene cyanol FF and 10 % glycerol.

6X Orange DNA Loading Dye

10 mM Tris-HCl (pH 7.6), 0.15 % orange G, 0.03 % xylene cyanol FF, 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.
- Dilute your DNA sample with the 6X Orange DNA Loading Dye (#R0631, supplied with the ladder). Mix 1 volume of the dye solution with 5 volumes of the DNA sample.
- Not designed for DNA quantification.
- Not designed for denaturing polyacrylamide gel.
- The O'RangeRuler 20 bp DNA Ladder may show additional bands of low intensity in agarose gels. These are circular form of the DNA ligation products
- 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.

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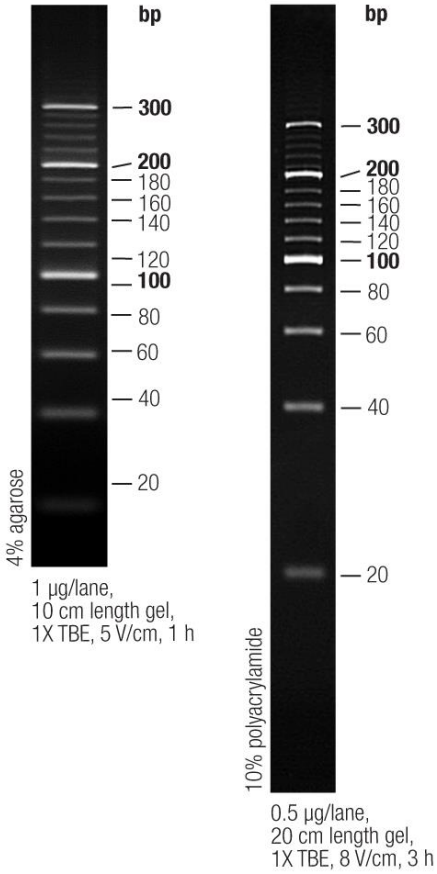

Revision history: Pub. No. MAN0013046

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

Limited product warranty

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