RiboRuler Low Range RNA Ladder, ready-to-use

Catalog Number SM1833

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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
SM1833	RiboRuler Low Range RNA Ladder, ready-to-use	200 (5 x 40) µL (for 50 applications)	-70 °C or at -20 °C (up to 6 months)
	2X RNA Loading Dye	1 mL	

Description

Thermo Scientific™ RiboRuler™ Low Range RNA Ladder, ready-to-use, is premixed with the RNA Loading Dye and can be directly applied on both the native or denaturing agarose gels. It is a mixture of seven chromatography-purified single-stranded RNA transcripts (in bases): 1000, 800, 600, 400, 300, 200 and 100. The ladder is designed for qualitative and quantitative analysis of RNA on agarose gels stained with ethidium bromide or SYBR™ Green II.

The ladder is free of degraded RNA and NTP's. Therefore, spectrophotometric measurements provide accurate values of RNA concentration in each ladder band. Due to this feature, the RiboRuler™ RNA ladder can be used for approximate RNA quantification on gels.

The RiboRuler™ Low Range RNA Ladder, ready-to-use, is recommended for electrophoresis in the following: native 2 % agarose with TAE buffer, denaturing formaldehyde agarose with MOPS buffer, denaturing glyoxal/DMSO agarose with sodium phosphate buffer and denaturing polyacrylamide gel electrophoresis in TBE buffer (*see* RNA electrophoresis protocols on www.thermofisher.com).

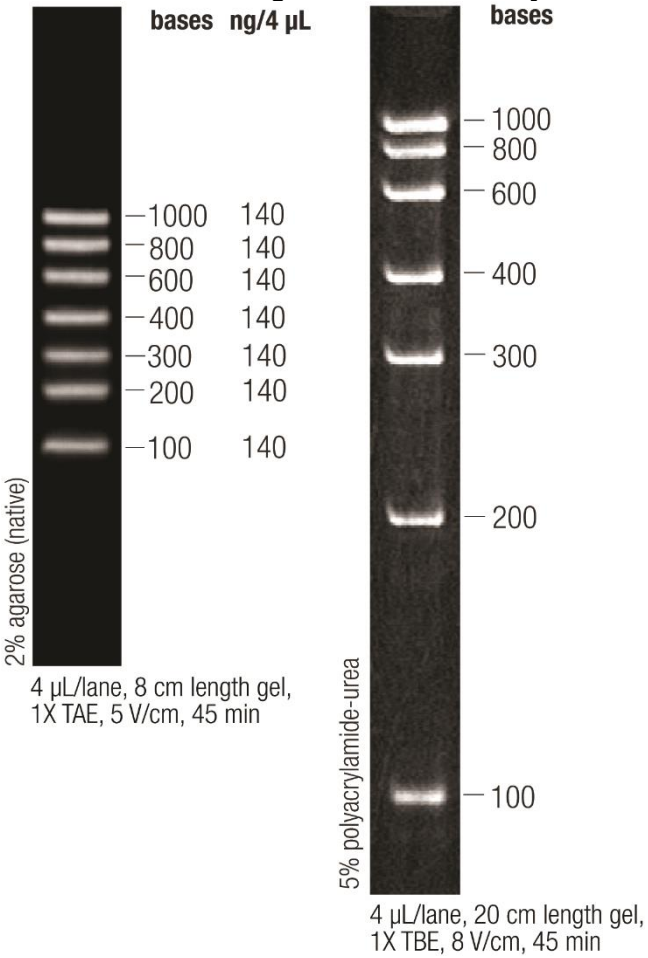
Storage in Loading Buffer

47.5 % formamide, 0.0125 % SDS, 0.0125 % bromophenol blue, 0.0125 % xylene cyanol FF, 0.0125 % ethidium bromide, 0.75 mM EDTA.

2X RNA Loading Dye

95 % formamide, 0.025 % SDS, 0.025 % bromophenol blue, 0.025 % xylene cyanol FF, 0.025 % ethidium bromide, 0.5 mM EDTA.

RiboRuler™ Low Range RNA Ladder, ready-to-use



For Research Use Only. Not for use in diagnostic procedures.

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RECOMMENDATIONS FOR USE

Note

- RNA ladders, as any RNA, are extremely sensitive to degradation by ribonucleases. To avoid RNA degradation, use protective gloves and prepare fresh gels and electrophoresis buffers just before use. Plastic ware, tips and solutions should be treated with diethyl pyrocarbonate.
- Use the supplied 2X RNA Loading Dye for the preparation of the sample. Mix equal volumes of the 2X RNA Loading Dye and RNA sample, heat at 70 ºC for 10 min, chill on ice and load. The dye (#R0641) is also available separately.
- Loading of equal volumes of the sample and the ladder is recommended. The required volumes can be obtained by diluting samples with the 2X RNA Loading Dye Solution and Water, nuclease-free (#R0581).
- The 2X RNA Loading Dye contains a denaturing agent formamide. When samples are treated with this agent, RNA molecules separate according to their size both on native and denaturing agarose gels.
- For more precise RNA analysis and for Nothern blots, denaturing electrophoresis is recommended.

I. Loading on gel*

Use a 0.5 µL aliquot of the RNA ladder per 1 mm of the gel lane width.

❶ Thaw the ladder on ice.
❷ Mix the contents well by pipetting or by gentle vortexing, as concentration gradients may form in frozen products over time.
❸ Vortex briefly and spin down.
❹ Heat at 70 ºC for 10 min. Chill quickly on ice and load on gel.

* The probe is suitable for electrophoresis both in native agarose with TAE buffer, and in denaturing formaldehyde agarose with MOPS buffer. To prepare probes for electrophoresis in glyoxal/DMSO agarose with sodium phosphate buffer, *see* the protocol on www.thermofisher.com

II. RNA visualization

- The 2X RNA Loading Dye allows for RNA visualization without additional staining of denaturing agarose gels. If RNA fragments are separated on native agarose gels, additional staining with ethidium bromide is recommended.
- When visualizing a gel under UV light, an additional dark zone of ethidium bromide can sometimes be observed. However, this has no influence on the quality of RNA separation.
- Avoid long exposure to the UV light, as this may cause RNA degradation.
- For Northern blots, perform electrophoresis in denaturing formaldehyde agarose with MOPS buffer. A 4 µL aliquot of the RiboRuler™ RNA ladder is well visible after being transferred on Hybond-N+ membrane from 2 % formaldehyde gel, whereas the same amount of RNA ladder is less visible when transferred from 2 % native agarose.
- The ethidium bromide present in the sample and/or in the gel does not interfere neither with the RNA transfer onto the membrane, nor with RNA hybridization with the probe.

Limited product warranty

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For descriptions of symbols on product labels or product documents, go to **thermofisher.com/symbols-definition**.

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