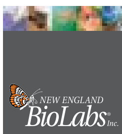
ssRNA Ladder



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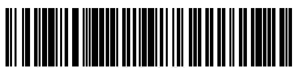


N0362S

25 gel lanes (25 µg) **Lot: 0671303**

500 µg/ml **Store at –70°C** **Exp: 3/14**

Description: The ssRNA Ladder is a set of 7 RNA molecules produced by *in vitro* transcription of a mixture of 7 linear DNA templates. The ladder sizes are: 9000, 7000, 5000, 3000, 2000, 1000 and 500 bases. The 3000 base fragment is at double intensity to serve as a reference band. This ladder is suitable for use as an ssRNA size standard on denaturing or native agarose gels.

Supplied in: 20 mM KOAc (pH 4.5)

Usage Recommendation: This marker was not designed for precise quantification of ssRNA mass.

Note: Store at –70°C. For short term storage (< 1 week), ladder can be stored at –20°C.

Reagents Supplied with Ladders:
RNA Loading Dye, (2X)
(for use with native agarose gels)

2X RNA Loading Dye:
47.5% formamide
0.01% SDS
0.01% bromophenol blue
0.005% xylene cyanol
0.5 mM EDTA

Denaturing vs. Native Agarose Gels: It is common practice to electrophorese RNA on a fully denaturing agarose gel, such as one containing formaldehyde (1). However, in many cases it is possible to run RNA on a native agarose gel and obtain suitable results. In fact, it has been demonstrated that treatment of RNA samples in a denaturing buffer maintains the RNA molecules in a denatured state, during electrophoresis, for at least 3 hours (2,3). The use of native agarose gels eliminates problems associated with toxic chemicals and the difficulties encountered when staining and blotting formaldehyde gels.

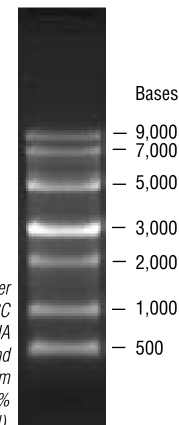
Sample Preparation: The ssRNA Ladder is also compatible with formaldehyde-based loading buffers.

<u>Method:</u>
This method utilizes the RNA Loading Dye, (2X) provided, and samples should be run on a native gel prepared with 1X TBE. This method **does not** always denature RNA molecules completely.

1. Combine on ice:

ssRNA Ladder (500 µg/ml)	2 µl (1 µg)
H_2O (RNase-free)	3 µl
RNA Loading Dye, (2X)	5 µl
Total Volume	10 µl

2. Heat at 65°C for 5 minutes, chill on ice, load entire sample on gel.



1 µg of ssRNA Ladder was heated at 60°C for 5 minutes in 1X RNA Loading Dye and visualized by ethidium bromide staining (1.0% TBE agarose gel).

Notes on Use: Minimize repeated freeze-thaw cycles. It is best to aliquot the marker into single use portions.

To avoid ribonuclease contamination: wear gloves, use RNase-free water for gels and buffers, wash equipment with detergent and rinse thoroughly with RNase-free water.

(see other side)

CERTIFICATE OF ANALYSIS

ssRNA Ladder

NEW ENGLAND BioLabs Inc.
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www.neb.com
N0362S 067130314031

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Bases 9,000 7,000 5,000 3,000 2,000 1,000 500

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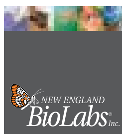

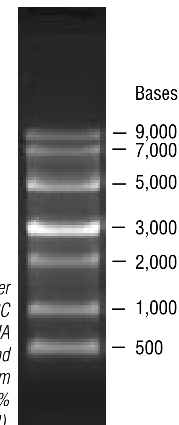

References:

1. Sambrook, J., Fritsch, E.F. and Maniatis, T. (1989). *Molecular Cloning*: *A Laboratory Manual*, (2nd ed.), (pp. 7.43–7.45). Cold Spring Harbor: Cold Spring Harbor Laboratory Press.
2. Liu, Y-C. and Chou, Y-C. (1990) *Biotechniques* 9, 558.
3. Sandra Cook, and Christina Marchetti, unpublished observations.

References:

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