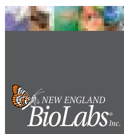
Low Range ssRNA Ladder



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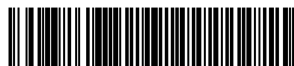


N0364S

25 gel lanes (25 µg) **Lot: 0221212**

500 µg/ml **Store at –70°C** **Exp: 12/13**

Description: The Low Range ssRNA Ladder is a set of 6 RNA molecules produced by *in vitro* transcription of a mixture of 6 linear DNA templates. The ladder sizes are: 1000, 500, 300, 150, 80 and 50 bases. The 300 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 polyacrylamide-urea gels, and 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 denaturing polyacrylamide-urea gels and 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.

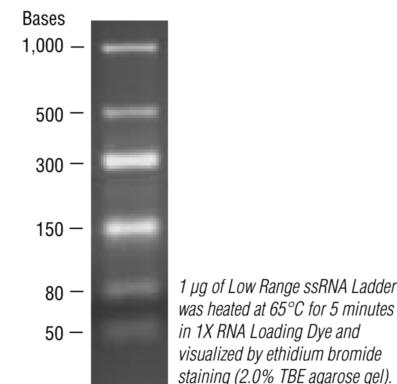
Sample Preparation: The Low Range ssRNA Ladder is also compatible with formaldehyde-based loading buffers.

Method:
This method utilizes the RNA Loading Dye, (2X) provided and samples should be run on a denaturing polyacrylamide-urea gel prepared with 1X TBE.

1. Combine on ice:

Low Range ssRNA Ladder (500 µg/ml)	0.5 µl (0.25 µg)
H_2O (RNase-free)	4.5 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.
3. Run gel according to manufacturer's conditions. All six bands of the marker can be resolved on a 6% gel. 0.5 µg/ml ethidium bromide will effectively stain the bands after electrophoresis.



1 µg of Low Range ssRNA Ladder was heated at 65°C for 5 minutes in 1X RNA Loading Dye and visualized by ethidium bromide staining (2.0% TBE agarose gel).

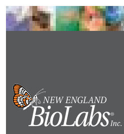
Notes on Use: Minimize repeated freeze-thaw cycles. It is best to aliquot the marker into single use portions.

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

Low Range ssRNA Ladder



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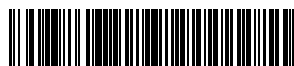

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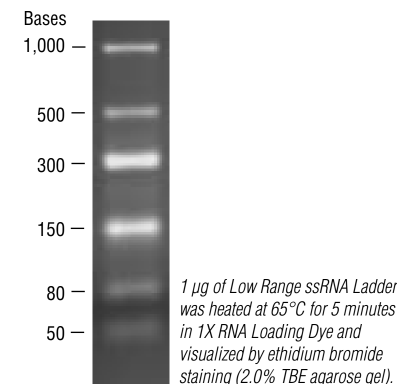

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References:

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.
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References:

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