MCLAB
Molecular Cloning Laboratories

User Manual

Product name: RNase R

Cat #: RNASR-100, RNASR-200, RNASR-OEM

Description:

RNase R is an E. coli exoribonuclease which exhibits 3' to 5' exonuclease activity, efficiently digesting nearly all linear RNA species. This enzyme does not digest circular, lariat, or double-stranded RNA with short 3' overhangs (less than seven nucleotides). RNase R is ideally suited to the study of lariat RNA produced by traditional splicing, as well as circRNAs which arise through back-splicing. By removing linear RNAs from cellular or RNA extracts, RNase R greatly facilitates the identification of circular species through RNA-sequencing.

Applications:

- Alternative splicing studies
- Gene expression studies
- Intron cDNA production
- Intronic screening of cDNA libraries
- Isolation of splicing intermediates and lariats

Protocol:

1. Thoroughly thaw and mix individual components before use, and assemble the reaction on ice.

	20 ul reaction
RNA	10–20 ug
10X RNase R Reaction Buffer	2 ul
RNase R	1 ul
Nuclease-free water	Up to 20 ul

2. Gently mix the reaction components and briefly centrifuge.
3. For NGS applications, incubate the mixture at 37℃ for 2 hours.
4. For Non-NGS applications, incubate the mixture at 37-45℃ for 2-3 hours.

Precautions:

1. Maintaining a 1:1 ratio of RNA (ug) to RNase R (units) is essential to minimize star activity and prevent unintended RNA digestion.
2. RNase R can be diluted to the desired concentration in 1X RNase R Reaction Buffer.
3. Wearing gloves and using nuclease-free tubes and reagents is strongly recommended to avoid RNase contamination.
4. If desired, 0.5 ul of RNase Inhibitor, Murine (RNIN-100) can be added to the reaction.

Recommended Storage Condition: -20°C