

## RNase R

### R749973

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**Storage:** -20°C. Avoid freeze/thaw cycle.

#### Introduction:

RNase R (Ribonuclease R) is an Mg<sup>2+</sup> dependent exonuclease derived from the Escherichia coli RNR superfamily that completely hydrolyzes linear RNA into dinucleotides and trinucleotides from the 3'→5' direction. It is not sensitive to circular RNA and double-stranded RNA, and can be used for the production of special structural RNA, such as circRNA, lariat RNA, double-stranded RNA with 3' protruding end less than 7 nucleotides, and tRNA with complex structure. RNase R is commonly used in gene expression and variable shear studies, and can digest linear RNA to enrich circ RNA or lariat RNA.

#### Source:

Recombinant E.coli.

#### Activity unit definition:

The amount of enzyme required to convert 1µg poly(A) to acid-soluble nucleotides for 10min under standard reaction conditions at 37 ° C is defined as 1U.

#### Recommended RNase R digestive system:

Component	Volume
RNA	1 µg
10×RNase R Buffer	2 µL
RNase R	1-4 U/µg RNA
RNase-Free Water	Up to 20 µL

Reaction conditions: digestion at 37°C for 15min, incubation at 70°C for 10min can deactivate the enzyme.

\* When preparing the reaction system, RNase R (20U/µL) can be diluted to a suitable working concentration by RNase R Dilution Buffer, and it is recommended to use it now.

#### Scope of application:

Removal of linear RNA, enrichment of circ RNA from biological samples, variable shear studies, analysis and identification of intron lasso sequences, etc.

#### Matters needing attention:

1. The play of RNase R activity requires 0.1-1.0mM Mg<sup>2+</sup>.
2. With the increase of substrate RNA, the digestion time and enzyme amount can be

appropriately prolonged.

3. The content of EDTA in RNA samples may affect the activity of RNase R. Try to reduce the amount of RNase R or shorten the digestion time.
4. The abundance of some circRNA or lasso structure RNA will decrease after prolonged digestion of RNase R, which may be due to their weak digestion ability. To tolerate RNase R. Therefore, attempts can be made to reduce the amount of RNase R or shorten the digestion time.

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