

**Protocol** Cat. No. K3061



RNase R (20 U/µL)



#### **Product description**

Ribonuclease R (RNase R) is a magnesium-dependent  $3' \rightarrow 5'$  exoribonuclease derived from Escherichia coli. RNase R specifically digests linear RNA, but generally does not digest circular RNA (although excessive enzyme amounts may lead to digestion of circular RNA), lariat RNA, double-stranded RNA with 3' overhangs shorter than 7 nucleotides, or RNAs with complex secondary structures such as tRNA and 5S RNA.

RNase R is commonly used to digest and remove linear RNA, thereby enriching circular RNA, intron lariats, and other nonlinear RNAs. Additionally, RNase R is widely applied in RNA sequencing experiments to remove linear RNA, thus improving the quality and accuracy of sequencing data and greatly facilitating studies on gene expression and alternative splicing.

## **Composition and storage conditions**

Components Size	250 U	2500 U	10000 U Provence	Storage
RNase R (20 U/µL)	12.5 μL	125 μL	500 μL	-20°C
10× RNase R Reaction Buffer	250 μL	3×1 mL	10 mL	-20°C
Shipping: Dry Ice	Shelf life: 2 years		· · · · · ·	

## **Experimental operation**

1. Prepare the reaction system according to the table below:



\*Note: RNase R requires an appropriate magnesium ion concentration (0.1-1.0 mM) for optimal activity. The presence of chelating agents such as EDTA, which bind magnesium ions, will significantly reduce RNase R activity. If necessary, additional MgCl<sub>2</sub> can be added to ensure the free magnesium ion concentration in the reaction system is at least 0.1 mM, preventing chelating agents from affecting enzyme activity.

# 2. Incubate at 37°C for 10 min to digest RNA.

\*Note: Adjust enzyme amount and reaction time according to actual experimental conditions.

- 3. Incubate at 70°C for 10 min to inactivate the enzyme and terminate the reaction.
- 4. Purify the RNA for subsequent downstream molecular experiments.

#### Notes

- 1. The amount of RNase R and reaction volume should be adjusted according to specific experimental conditions.
- 2. This product is for scientific use only.



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