RNase GG

REF: EG25521-S/M

Storage Condition

Store at -20℃ for 2 years.

Components

Component	EG25521S	EG25521M
RNase GG (50 U/μl)	50 μl	250 μl
10× RNase GG Buffer	1 ml	1 ml

Description

This product is derived from thermophilic archaea and obtained via recombinant expression and purification. RNase GG is an endoribonuclease that specifically recognizes and cleaves GG sites in single-stranded or double-stranded RNA, with no activity towards ssDNA or dsDNA. RNase GG efficiently cleaves GG sites within secondary structures, making it highly advantageous for analyzing complex RNA structures. It exhibits extreme thermostability, maintaining activity between 37 and 95 ℃ with optimal activity at 60~70 ℃ . Its activity is metal ion-independent and compatible with most buffers commonly used in RNA research.

Definition of Activity Unit

One activity unit (U) is defined as the amount of enzyme required to completely cleave 2 pmol of a 40 nt RNA substrate containing a single G/G site at 37℃ within 30 min.

Recommended Reaction Conditions

1× RNase GG Buffer; Incubate at 60℃ .

Heat Inactivation

Final concentration of 1% SDS, 95℃ 3 min.

Quality Control Assays

Protein Purity

The enzyme is ≥95% pure as determined by SDS-PAGE analysis using Coomassie Blue staining.

Endonuclease Activity

A 20 μl reaction containing 200 ng of supercoiled plasmid and 50 U of RNase GG incubated for 4 hours at 37 ℃ results in <20% conversion to the nicked or linearized form as determined by agarose gel electrophoresis.

Non-specific Nuclease Activity

A 20 μl reaction containing 15 ng of dsDNA fragments and 50 U of RNase GG incubated for 16 hours at 37 ℃ results in no detectable degradation of the dsDNA fragments as determined by agarose gel electrophoresis.

RNase Activity

A 10 μl reaction containing 500 ng of RNA and 50 U of RNase GG was incubated for 1 hour at 37℃ , and subsequent polyacrylamide gel electrophoresis analysis revealed no alteration in the RNA structure or integrity.

Protocol

① Combine the following components on ice in the following order:

Reagent	Amount
RNA	10 μg
10× RNase GG Buffer	2 μl
RNase GG (50 U/μl)	1 μl
RNase Inhibitor, Murine (40 U/μl) (optional)	1~2 μl
ddH_2O	Up to 20 μl

② Mix gently and spin down.

③ Incubate at a constant temperature of 60 ℃ for 1 h. Adjust reaction time and enzyme amount according to specific applications.

④ (Optional) Reaction termination: Add SDS to the reaction system to a final concentration of 1% and incubate at 95℃ for 3 min.

Notice

1. This product is for research use only.
2. For your safety and health, please wear a lab coat and disposable gloves during the operation.

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