T4 Endonuclease VII

Product description

T4 Endonuclease VII is a product of T4 phage gene 49 with a molecular weight of about 18 kDa. T4 endonuclease VII is involved in DNA packaging, gene recombination, and mismatch repair in vivo. It has also been shown to degrade mismatched single-base, heterologous double-stranded loops and branched DNA, such as four-way Holliday structures and three-way Y structures in vitro. This product can be used to detect mutants formed by CRISPR/Cas9, TALEN and other gene editing tools, as well as to detect gene point mutations and SNP.

Components and storage conditions

Components \ Size	500 U	1000 U	2500 U
T4 Endonuclease VII (10 U/μL)	0.05 mL	0.1 mL	0.25 mL
10X T4 Endonuclease VII Reaction Buffer	0.5 mL	1 mL	2.5 mL
Store the components at -20 °C.			

Experimental operation

Take the digestion of base-mismatched DNA fragments for example

1. Configure the reaction system on ice according to the following table:

Total Reaction Volume	20 μL	
DNA fragment	X μL	200-400 ng
10X T4 Endonuclease VII Reaction Buffer	2 μL	
T4 Endonuclease VII	1 μL	
Nuclease-free Water	X μL	To 20 μL

2. Mix the reaction system Gently, then centrifuge rapidly to collect the residual liquid from the tube wall.
3. Incubate at 37 °C for 30 min.
4. Lysing bands can be examined by agarose gel electrophoresis.

Notes

1. T4 Endonuclease VII should be added last when configuring the reaction system. Keep T4 Endonuclease VII on ice when removing it from the freezer.
2. Mix the components by repeat pipetting or "flicking" the tube. Do not mix the reactants by vortexing.
3. If it is found that the intended digestion site cannot be cleaved, the amount of enzyme can be adjusted appropriately.

Product characteristics

1. Enzyme activity unit (U) definition: The amount of enzyme required to digest 50% of the 1 pmol single-base mismatched hybrid strand at 37°C for 30 min in a 50 μL reaction system containing T4 Endonuclease VII Reaction Buffer.
2. Stored solution composition: 10 mM Tris-HCl(pH 7.4), 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 50% Glycerol.
3. 10X T4 Endonuclease VII Reaction buffer: 500 mM Tris-HCl(pH 8.0 @ 25°C), 100 mM $MgCl_2$, 100 mM β-mercaptoethanol, 1 mg/mL BSA.
4. Quality assurance:
   - Purity: SDS-PAGE detection purity > 95%.
   - No non-specific nuclease, endonuclease or exonuclease.
   - No RNase.
5. Inactivation conditions: T4 Endonuclease VII can be inactivated by heating at 80 °C for 20 minutes.
6. This product is for scientific use only.

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