Taq antibody

REF: EG20105S

Storage Condition

-20℃

Components

Component	Amount
Taq antibody (5 U/μl)	40 μl

Description

Taq Antibody is a monoclonal antibody of murine origin that binds Taq polymerase and inhibits its activity efficiently. This antibody is able to bind to Taq DNA Polymerase so strongly that inhibits 95% activity of Polymerase at 55 ℃ . Therefore, nonspecific amplification due to mispriming and/or formation of primer dimers during PCR assembly is prevented. After heated at 95℃ for 30 seconds, the enzyme-antibody complex dissociates, and the Taq Antibody becomes nonfunctional. Once the antibody is denatured, the activity of the Taq DNA polymerase is restored and the enzyme functions normally during the PCR reaction. Thus, this product is suitable for all kinds of hot start PCR and quantitative PCR reactions based on Taq DNA polymerase.

Definition of Activity

Following incubation of Taq antibody and Taq DNA polymerase at 37℃ for 3 hours, one unit is defined as the amount of product required to inhibit 95% activity of one unit Taq DNA polymerase (at 50℃ for 1 hours).

Quality Control Assays

Protein Purity

The enzyme is ≥90% pure as determined by SDS-PAGE analysis using Coomassie Blue staining.

Function

Activity Inhibition Assay: Taq DNA Polymerase inhibited by Taq antibody is incubated at 50℃ for 4 hours, and the released polymerase activity is less than 5%.

Hot-Start Assay: Taq DNA Polymerase inhibited by Taq antibody is incubated at 95℃ for 30 seconds, and the released polymerase activity ≥95%.

Endonuclease Activity

A 20 μl reaction containing 200 ng of supercoiled plasmid and 5 U of Taq antibody incubated for 4 hours at 37℃ results in <10% 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 5 U of Taq antibody incubated for 16 hours at 37 ℃ results in no detectable degradation of the dsDNA fragments as determined by agarose gel electrophoresis.

Residual Host DNA

The product was tested by TaqMan qPCR with primers specific for the mouse genomic DNA, and the results show that the genome residues less than 1 copy.

Protocol

Mix Taq DNA Polymerase (REF: EG15109, 5 U/μl) and Taq antibody (5 U/μl) in equal volumes. Incubate at 37℃ for 3 hours to obtain hot-start Taq DNA Polymerase (2.5 U/μl).

If the Taq DNA polymerase used is not from Best-Enzyme, the optimal incubation ratio can be determined as follows:

① Select one or more pairs of primers that tend to produce nonspecific amplification when amplified individually.

② Prepare the Taq antibody and Taq DNA Polymerase incubation system according to the table below (adjust as needed):

Reaction Ratio	2:1	1:1	1:2	1:4	1:8	1:10
Taq antibody (5 U/μl)	1 μl	1 μl	1 μl	1 μl	1 μl	1 μl
Taq DNA Polymerase	0.5 μl	1 μl	2 μl	4 μl	8 μl	10 μl

③ Incubate at 37℃ for 3 hours.

④ Prepare the PCR reaction system and analyze the results by agarose gel electrophoresis to determine the optimal incubation ratio based on the presence or absence of nonspecific amplification bands.

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