T4 β-glucosyltransferase

Instruction for Use

Cat. No./Spec.: E1020-A/500 U

Concentration: 5 U/μL

Product Description

T4 β-glucosyltransferase (T4 BGT) is capable of transferring the glucosyl group from uridine diphosphate glucose (UDP-glucose) to the 5-hydroxymethylcytosine (5-hmC) residues within double-stranded DNA, resulting in the formation of β-glucosyl-5-hydroxymethylcytosine. This enzyme is formulated for rapid reaction times without compromising the efficiency of the reaction. It can glucosylate 5-hmC on 1 μg of DNA in 15 minutes at 37° C.

Components

Component	*E1020-A*
T4 β-glucosyltransferase	*100 μL*
10X Epi Buffer	*1.2 mL*
10X UDP-glucose	*500 μL*

Storage Condition & Shelf Life

Store at -20°C.

Unit Definition

A unit is defined as the amount of enzyme required to protect 0.5 μg of fully 5-hydroxymethylated 1095bp PCR fragment from digestion by MunI within 1 hour at 37° C in a 50 μL volume of the recommended reaction buffer.

Features

- Specificity - Selectively transfers glucose to the hydroxymethyl group of 5-hmC.

- Speed - Completes the glucosylation of 1 μg DNA in 15 minutes.

- Convenience - Comes with optimized buffer and UDP-glucose included.

Scope of Application

- Site-specific detection of 5-hmC.

- Enrichment of DNA containing 5-hmC.

- Labeling of 5-hmC residues using radioactive UDP-glucose donor.

Protocol

① Prepare the reaction system at room temperature:

Component	*Amount*
10X Epi Buffer	*5 μL*
10X UDP-glucose	*5 μL*
DNA	*Up to 1 μg*
Nuclease-free Water	*To 49 μL*
T4 β-glucosyltransferase	*1 μL*
Total volume	*50 μL*

② Gently mix and centrifuge briefly for a few seconds.

③ Incubate at 37°C for 15 minutes.

④ Terminate the reaction by heating at 65°C for 20 minutes.

This product is for research use only.