Product Manual

Product Name	pG-Tn5 Transposome
Source	Recombinant expression in Escherichia coli
Catalog Number	CSB-DEM069
Physical Form	Liquid
Storage Conditions	-20° C
Molecular Weight	70 kDa
Storage Buffer	50mM HEPES (pH 7.2), 100mM NaCl, 0.1mM EDTA, 1mM DTT, 0.1% Triton X-100, 50% (v/v) Glycerol
Quality Control	No residual nucleases and exonucleases
Shelf Life	12 months

Product Description

pG-Tn5 Transposase is a fusion enzyme created by combining Protein G with modified high-activity Tn5 transposase. This fusion enzyme possesses both transposase and Protein G activities, making it suitable for CUT&Tag technology, which is used for protein-genome interaction studies.

CUT&Tag is a novel method for studying protein-DNA interactions and offers several advantages over traditional ChIP-seq, including time efficiency, low cell requirement, low background signal, good reproducibility, and even applicability to single-cell sequencing. CUT&Tag is a powerful tool for studying protein-chromatin DNA interactions and has significant implications in gene regulation and epigenetics research.

The Protein G component in this product primarily interacts with the Fc region of immunoglobulins and can bind to IgG from most mammalian species.

Product Components

Label	Component	Specifications	
1	pG-Tn5 Transposome (4 μM)	12μL	48μL

Applications

(1) DNA Fragmentatio

Components	Reaction
DNA	50-100 ng
pG-Tn5 Transposome	1 uL
Tagment Buffer (5X)	5 uL
ddH2O	To 25 uL

Prepare a 25μl fragmentation Reaction by thoroughly mixing the components. Incubate the system at 55°C for 10 minutes, then add 5μl of 5×Stop Buffer, mix, and incubate at 55°C for an additional 5 minutes to terminate the reaction. The fragmented DNA can be used for detection or library construction. If the fragmented fragments are too long, the amount of transposome can be increased to reduce fragment size, and vice versa, the amount of transposome can be reduced.

(2) Amplification of Fragmented Products

1)Prepare the following components in a PCR tube.

Components	Volume
Fragmented DNA	30 μL
5×Pfu buffer	10 μL
N5 Primer（10 μM）	2.5 μL
N7 Primer（10 μM）	2.5 μL
Pfu DNA Polymerasea[a]	1 μL
Total	50 μL

Note:a. PCR reactions should use non-hot start Taq enzymes, such as CSB-DEM035, CSB-DEM034, CSB-DEM023.

2) Gently mix the components by pipetting up and down 10 times, and perform the following reaction in a PCR machine.

Temperature	Time	Cycle Number
72°C	3 min	1
98°C	30 s	1
98°C 60°C 72°C	15 s 30 s 1 min	X[b]
72°C	5 min	1
4°C	Hold	---

Note: b.The number of amplification cycles can be adjusted based on the input DNA amount and experimental requirements.

(3) Library Length Distribution Detection

Use a 2% agarose gel electrophoresis or Agilent 2100 Bioanalyzer to detect the length distribution of the library.