

TnpB Nuclease

Product Information

Name	Cat.	Specification
TnpB Nuclease	CAS-EE151	100UG/1MG

Product Description

Derived from environmental metagenomes, TnpB is one of the smallest known RNA-guided nucleases and serves as a compact member of the TnpB protein family. This nuclease forms a ribonucleoprotein complex (RNP) with its guide RNA (reRNA) to recognize specific DNA motifs (e.g., TTAA) on the target DNA. Precise sequence targeting is achieved through complementary base pairing between the target DNA and the 3'-terminal sequence (typically 20 nt) of the guide RNA. This interaction induces a site-specific double-strand break (DSB), and gene editing is realized as the cell's endogenous repair mechanisms resolve these breaks.

Source

E. coli

Molecular Weight

91.51KDa

Concentration

10.0 mg/ml

Purity

Bis-Tris PAGE purity ≥ 90.0%

SEC-HPLC purity ≥ 90.0%

Endotoxin

≤ 10.0 EU/mg

Storage Buffer

20 mM Tris, 300 mM NaCl, 0.1 mM EDTA, 5 mM DTT, 50% Glycerol, pH 7.4

Shipping and Storage

Ship on dry ice. Store at -80°C ± 10°C. Avoid repeated freeze-thaw cycles.

Application

This system facilitates precise gene knockout and knock-in for diverse fields, including cell and gene therapy, agricultural biotechnology and beyond.

Validation Data

(1) Purity (Bis-Tris PAGE)



Fig.1 Bis-Tris PAGE analysis demonstrated that the purity of TnpB Nuclease is higher than 90.0%.

(2) Purity (SEC-HPLC)

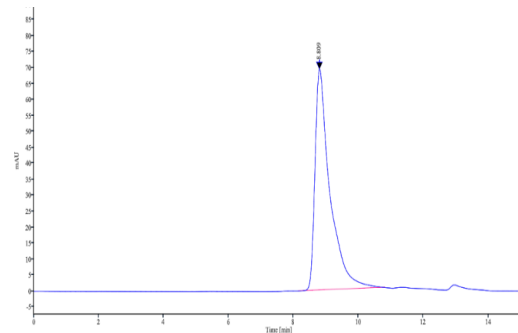


Fig.2 SEC-HPLC analysis demonstrated that the purity of TnpB Nuclease is higher than 90.0%.

(3) *In vitro* Cleavage Activity

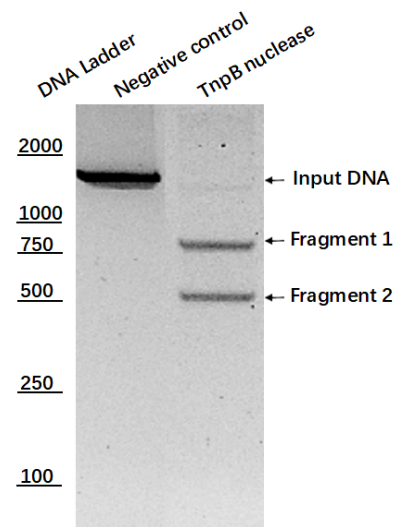


Fig.3 *In vitro* cleavage assay verified that TnpB Nuclease can effectively cleave DNA substrates.

(4) Gene Editing Efficiency

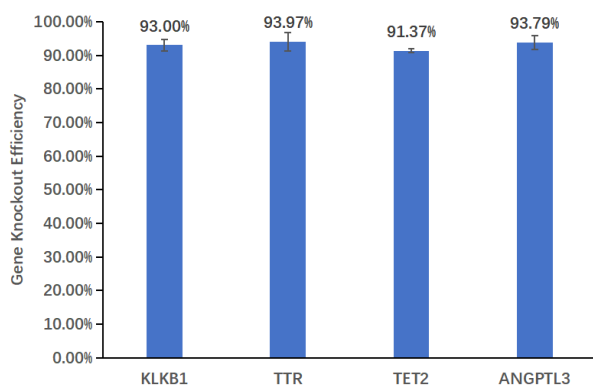


Fig.4 TnpB Nuclease can efficiently knockout KLKB1, TTR and TET2 genes in HEK293T cells as well as ANGPTL3 gene in Hepa1-6 cells.

Cautions

1. Avoid repeated freeze-thaw cycles.
2. This product is intended for scientific research use only and shall not be used for any other purposes.