

Recombinant Tn5 Transposase protein

Catalog No: 81286

Expressed In: *E. coli*

Quantity: 10 µg

Source: *E. coli*

Buffer Contents: Recombinant Tn5 Transposase protein is supplied at a concentration of 0.5 µg/µl in 50 mM HEPESNaOH pH 7.4, 100 mM NaCl, 50% glycerol, 0.1 mM EDTA, 0.1% Triton X-100, and 1 mM DTT.

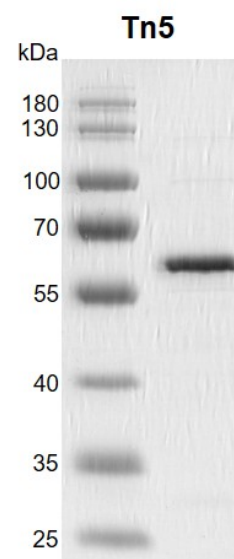
Background: Transposase (Tnp) Tn5 is a member of the RNase superfamily of proteins which includes retroviral integrases. Some DNA fragments can change their own location in the genome. Such fragments are called transposable elements (TEs) or transposons. Transposable elements are found in almost every organism — from bacteria to higher eukaryotes, including humans — and they play a crucial role in evolution because they are a powerful source of genetic variability. Transpositions and rearrangements of genetic material are normal and often beneficial for the species, but in many cases they may cause harm or death to an organism. Most TEs carry one or more genes encoding the proteins necessary for transposition. Transposases are among such proteins. Such tight regulation might enable the host cell to strike a balance between insuring proliferation of the transposable element and insuring the cell's own genetic survival.

Bacterial Tn5 is a composite transposon in which genes encoding three antibiotic resistance proteins are bracketed by two IS50 elements, IS50L and IS50R. Both IS50 elements are delineated by 19-bp sequences, the inside end (IE) and the outside end (OE). IS50R encodes the transposase (Tnp) and it is a fully functional transposable element. Because of its properties, Tn5 transposase can be used for tagmentation-based library construction, and it is efficient for generating sequencing libraries. Transposition works through a “cut-and-paste” mechanism, where the Tn5 excises itself from the donor DNA and inserts into a target sequence, creating a 9-bp duplication of the target. A great advancement in library preparation was the introduction of a hyperactive variant of the Tn5 transposase that mediates the fragmentation of double-stranded DNA and ligates synthetic oligonucleotides at both ends in a 5-min reaction.

Protein Details: Recombinant Tn5 Transposase protein was expressed in *E. coli* as the full length protein (Accession No.ADY68344.1) without any tags or redundant amino acids. This Tn5 mutants were called as hyperactive Tn5 transposase since it can be used to randomly insert Tn5 Transposon into any target DNA *in vitro*. The molecular weight of it is 53.3 kDa.

Application Notes: Recombinant Tn5 Transposase protein is useful for in vitro transgenic experimenta and construction of random library for NGS.

Storage and Guarantee: Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is guaranteed for 6 months from date of arrival.



Recombinant Tn5 Transposase SDS-PAGE gel

Protein was run on a 10% SDS-PAGE gel and stained with Coomassie blue.

MW: 53.3 kDa

Purity: > 90%