Intact Genomics® T4 UvsY Protein

Catalog #:	Package Size	Concentration
3572	25 µl (50 µg)	2 µg/µl
3575	250 µl (500 µg)	2 µg/µl

Description

UvsY is the phage T4 recombination mediator protein, and structural and biophysical studies provide insights into its role in T4 homologous recombination. During T4 homologous recombination, the UvsX recombinase must compete with the prebound gp32 single-stranded binding protein for DNA-binding sites and UvsY stimulates this filament nucleation event (1). UvsY is a 15.8-kDa protein with properties that are consistent with its role as mediator; it stimulates the DNA-dependent ATPase activity of UvsX, lowers the critical concentration of UvsX that is required for activity, and promotes strand exchange (2, 3). UvsY efficiently promotes the UvsX-catalyzed strand invasion reaction by recruiting to ssDNA–gp32 complexes, promotes the release of gp32, and favors the binding of UvsX.

Protein Purity

The physical purity of this enzyme is ≥98% as assessed by SDS-PAGE with Coomassie® blue staining (Fig. 1).

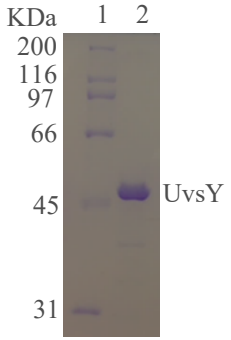

Fig. 1: Lane 1, Protein marker and lane 2, UvsY.

Product Source

E. coli BL21 (DE3) strain expressing T4 UvsY gene with an N-terminal GST tag. This GST tag does not have any effect on UvsY activity.

Product Includes

- UvsY protein
- 10X UvsY Reaction Buffer

1x UvsY reaction buffer composition

20 mM Tris-acetate
100 mM Potassium acetate
10 mM Magnesium acetate
1 mM DTT
pH 7.8 @ 25ºC

Storage Buffer

50 mM Tris-HCl
50 mM KCl
1 mM DTT
0.1 mM EDTA
50% Glycerol
pH 7.5 @ 25ºC

Storage Temperature

-20ºC

Quality Control assays

UvsY is free from detectable nuclease activities.

References

1. Beernink HT, Morrical SW. RMPs: Recombination/replication mediator proteins. Trends Biochem Sci. 1999;24(10):385–389.

2. Hashimoto K, Yonesaki T. The characterization of a complex of three bacteriophage T4 recombination proteins, uvsX protein, uvsY protein, and gene 32 protein, on single-stranded DNA. J Biol Chem. 1991;266(8):4883–4888.

3. Beernink HT, Morrical SW. The uvsY recombination protein of bacteriophage T4 forms hexamers in the presence and absence of single-stranded DNA. Biochemistry. 1998;37(16):5673–5681