Recombinant TYDP2 protein (His tag)

Catalog Number	544237
Synonyms	Tyr-DNA phosphodiesterase 2; hTDP2; 5'-tyrosyl-DNA phosphodiesterase; 5'-Tyr-DNA phosphodiesterase; ETS1-associated protein 2; ETS1-associated protein II; EAPII; TRAF and TNF receptor-associated protein; Tyrosyl-RNA phosphodiesterase; VPg unlinkase
Species	Human
Expression System	E. coli
Accession	O95551
Molecular Weight	Predictes a molecular mass of 30.32 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 30 kDa band.

Product Information

Sequence Region	111-362
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>85%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 111-362 aa (O95551) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant Human Tyrosyl-DNA Phosphodiesterase 2 (TDP2) Fragment (aa 111-362) is a high-purity protein designed for DNA repair and signaling studies. This 252-amino acid fragment offers a stable and soluble unit ideal for structural, biochemical, and functional assays, enabling researchers to explore key enzymatic activities such as 5'-tyrosyl-DNA phosphodiesterase function. Tyrosyl-DNA Phosphodiesterase 2 (TDP2) is a crucial DNA repair enzyme in Homo sapiens that hydrolyzes 5'-phosphodiester bonds to remove covalent adducts, including dead-end complexes with topoisomerase 2 (TOP2), facilitating the repair of DNA double-strand breaks without nuclease activity. This enzyme protects neurological gene transcription from TOP2-induced damage, hydrolyzes 5'-phosphoglycolates from radiation-exposed DNA, and regulates ribosome biogenesis under stress. Additionally, TDP2 acts as an adapter in TGF-beta signaling by promoting MAP3K7/TAK1 activation and may inhibit ETS1 and NF-kappa-B pathways. During picornavirus infection, it functions as a VPg unlinkase, cleaving viral RNA-protein bonds. TDP2 localizes primarily to the nucleus, including PML bodies and nucleoli, with cytoplasmic presence noted during viral infections, highlighting its versatility in cellular maintenance and stress response.