Recombinant THOC1 protein (His tag)

Catalog Number	540985
Synonyms	Nuclear matrix protein p84; p84N5; hTREX84
Species	Human
Expression System	E. coli
Accession	Q96FV9
Molecular Weight	Predictes a molecular mass of 11.91 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 13 kDa band.

Product Information

Sequence Region	567-657
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 567-657 aa (Q96FV9) 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 THOC1 (THO complex subunit 1) Fragment (aa 567-657) is a high-purity protein designed for functional studies of the Death domain. This 91-amino acid fragment provides a targeted tool for investigating apoptosis regulation, mRNA export mechanisms, and nuclear-cytoplasmic shuttling processes in mammalian systems. THOC1 is a crucial component of the THO subcomplex within the TREX complex, which coordinates mRNA transcription, processing, and nuclear export in human cells. The full-length protein specifically associates with spliced mRNA and facilitates efficient export of polyadenylated RNA via the TAP/NXF1 pathway. THOC1 regulates transcriptional elongation, prevents co-transcriptional R-loop formation to maintain genome stability, and participates in hair cell development potentially affecting hearing. Notably, it activates caspase-6-mediated apoptosis through a p53-independent pathway involving BAK1 and BCL2L1 expression changes and NF-kappa-B activation. THOC1 localizes primarily to nuclear speckles, nucleoplasm, and the nuclear matrix in isoform 1, while isoform 2 is cytoplasmic. The protein can shuttle between nucleus and cytoplasm, with nuclear localization being essential for its apoptotic function. The TREX complex containing THOC1 is also exploited by Kaposi's sarcoma-associated herpesvirus for export of intronless viral mRNAs.