Recombinant DCP2 protein (His tag)

Catalog Number	547665
Synonyms	Nucleoside diphosphate-linked moiety X motif 20; Nudix motif 20; mRNA-decapping enzyme 2; hDpc
Species	Human
Expression System	E. coli
Accession	Q8IU60
Molecular Weight	Predictes a molecular mass of 30.12 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 32 kDa band.

Product Information

Sequence Region	1-244
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>86%, 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 1-244 aa (Q8IU60) 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 DCP2 (1-244) is a high-purity protein fragment encompassing the complete Nudix hydrolase domain of m7GpppN-mRNA hydrolase. This catalytically active fragment provides researchers with an essential tool for studying mRNA decapping mechanisms, RNA turnover pathways, and post-transcriptional gene regulation. DCP2, also known as m7GpppN-mRNA hydrolase, is a critical decapping metalloenzyme that catalyzes the removal of the 7-methyl guanine cap structure from mRNA molecules, producing 5'-phosphorylated mRNA fragments and 7m-GDP. This enzyme plays a fundamental role in mRNA degradation pathways, including normal mRNA turnover and nonsense-mediated mRNA decay. DCP2 exhibits preferential activity toward mRNAs lacking poly(A) tails and is essential for replication-dependent histone mRNA degradation. The enzyme's activity is modulated by specific RNA modifications, as N(6)-methyladenosine methylation at the second transcribed position provides resistance to decapping. Beyond its canonical RNA degradation functions, DCP2 regulates autophagy in nutrient-rich conditions by repressing ATG-related gene expression through transcript degradation. The protein is predominantly localized to cytoplasmic processing bodies (P-bodies), with minor nuclear distribution, highlighting its central role in post-transcriptional regulatory complexes.