Recombinant DCPS protein (His tag)

Catalog Number	531946
Synonyms	Decapping scavenger enzyme; Heat shock-like protein; Protein DCS-1; Scavenger mRNA-decapping enzyme DcpS
Species	Caenorhabditis elegans
Expression System	E. coli
Accession	G5EFS4
Gene ID	180315
Molecular Weight	Predictes a molecular mass of 38.13 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 42 kDa band.

Product Information

Sequence Region	1-311
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 1-311 aa (G5EFS4) 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 m7GpppX diphosphatase (DCS-1) fragment from Caenororhabditis elegans, encompassing residues 1-311, is a high-quality protein designed for studying mRNA decapping mechanisms. This stable, soluble fragment retains key functional domains, making it ideal for structural and biochemical investigations into scavenger decapping enzyme activity. The full-length m7GpppX diphosphatase, also known as decapping scavenger enzyme (DcpS) or DCS-1, is a nucleus-localized enzyme critical for mRNA turnover. It catalyzes the hydrolysis of residual cap structures (e.g., m7GpppG) generated during 3'→5' exosome-mediated mRNA decay, releasing 5'-phosphorylated RNA fragments and 7-methylguanosine monophosphate (m7GMP). DCS-1 exhibits specificity for methylated cap analogs and binds strongly to m7GDP, potentially contributing to 5'→3' mRNA decay pathways. It does not act on intact capped mRNAs or unmethylated caps, highlighting its role as a dedicated scavenger in post-degradation cleanup. This enzyme's function is supported by studies demonstrating its activity on small capped oligoribonucleotides and its inability to hydrolyze m7GDP further.