



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human YTHDF1 Protein
Catalog Number: HRP-2738
Manufacturer: LD Biopharma, Inc.

Introduction

Human YTH domain-containing family protein-1 (YTHDF1) gene encodes an enzymatic protein, which specifically recognizes and binds N⁶-methyladenosine (m⁶A)-containing mRNAs, and promotes mRNA translation efficiency. The mRNA M⁶A is a modification present at internal sites of mRNAs and some non-coding RNAs and plays a role in the efficiency of mRNA splicing, processing and stability. It acts as a regulator of mRNA translation efficiency: promotes ribosome loading to m⁶A-containing mRNAs and interacts with translation initiation factors eIF3 (EIF3A or EIF3B) to facilitate translation initiation. Recent publications indicated that YTHDF1 activities may regulate anti-tumor immunity in dendritic cells. Specific anti-YTHDF1 autoantibodies has also been detected in some patients.

Full-length human YTHDF1 cDNA (558aa, derived from BC050284) was constructed with codon optimization using gene synthesis technology and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. It was expressed in *E. coli* as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol:	YTHDF1	(C20orf21; DACA-1)
Accession Number:	NP_060268	
Species:	Human	
Size:	20 µg / Vial	
Composition:	0.2 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose, DTT and others.	
Storage:	In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.	

Key References



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Dali Han, et al, *Anti-tumour immunity controlled through mRNA m6A methylation and YTHDF1 in dendritic cells*. Nature. <https://doi.org/10.1038/s41586-019-0916-x> (2019)

Zhao X, et al, *Overexpression of YTHDF1 is associated with poor prognosis in patients with hepatocellular carcinoma*. Cancer Biomark 21 (4), 859-868 (2018)

Tirumuru N, et al., *N(6)-methyladenosine of HIV-1 RNA regulates viral infection and HIV-1 Gag protein expression*. Elife 5, e15528 (2016)

Applications

1. May be used for in vitro YTHDF1 mediated mRNA methylation regulation study in various signaling pathways for various cancer cells by intracellular delivery of this recombinant YTHDF1 protein using protein delivery reagent, such as ProFectin reagent kit.
2. May be used for mapping YTHDF1 protein-protein interaction.
3. May be used as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. Potential biomarker protein / therapeutic target protein for cancer prognosis and cancer treatment drug development, such as liver cancer.
5. As native human YTHDF1 immunogen for specific antibody production.

Quality Control

Purity: > 90 % by SDS-PAGE.

Recombinant Human YTHDF1 Protein Sequence. (64.0 kD)

MASMTGGQQMGRGHHHHHENLYFQGGEFSATSVDTQRTKGQDNKVQNGSLHQKDTVHDNDFEP
YLTGQSNQNSYPSMSDPYLSSYPPSIGFPYSLNEAPWSTAGDPPIPYLTTYGQLSNGDHHFM
HDAVFGQPGLGNNIYQHRFNFFPENPAFSAWGTSQSGQQQTQSSAYGSSYTYPPSSLGGTVVD
GQPGFHSDTLSKAPGMNSLEQGMVGLKIGDVSSSAVKTVGSVVSVALTGVLGNGGTNVNMPV
SKPTSWAAIASKPAKQPQPKMKTSGPVMGGGLPPPPIKHNMDIGTWDNKGVPKAPVPQQAPSP
QAAPQPQQVAQPLPAQPPALAQPPYQSPQQPPQTRWVAPRNRNAAFGQSGGAGSDSNSPGNVQP
NSAPSVESHVPLEKLAHNSYNPKEFEWNLKSGRVFI IKSYSEDDIHRSIKYSIWCSTEHGKNR
LDSAFRCMSSKGPVYLLFSVNGSGHFCGVAEMKSPVDYGTSAGVWSQDKWKGFQVQWIFVKDV
PNNQLRHIRLENNDNKPVNTSRDTQEVPLEKAKQVLKIISSYKHTTSIFDDFAHYEKRQEEEEV
VRKERQSRNKQ