Recombinant YTHDF3 (407-560) protein

Catalog No: 81104, 81804
Lot No: 34717001
Expressed In: *E. coli*

Quantity: 100, 1000 µg
Concentration: 1.7 µg/µl
Source: Human

Buffer Contents: Recombinant YTHDF3 (407-560) protein is supplied in 25 mM Tris-HCl pH 8.0, 300 mM NaCl, 10% glycerol and 0.5 mM TCEP.

Background: YTHDF3 (YTH N6-Methyladenosine RNA Binding Protein 3) is a member of the YTH (YT521-B homology) superfamily containing YTH domain. Human YTH domain family proteins include three members, YTHDF1-3, which mainly localized in the cytoplasm. YTHDF3 specifically recognizes and binds N6-methyladenosine (m6A)-containing RNAs and promotes RNA translation efficiency, sharing m6A-containing mRNAs targets with YTHDF1 and YTHDF2, and regulates different processes depending on the context. It facilitates the translation of targeted mRNAs in cooperation with YTHDF1 by binding to m6A-containing mRNAs and interacting with 40S and 60S ribosome subunits. It can also act as a regulator of mRNA stability in cooperation with YTHDF2 by binding to m6A-containing mRNA and promoting their degradation. YTHDF3 recognizes and binds m6A-containing circular RNAs (circRNAs) and promotes their translation. circRNAs are generated through back-splicing of pre-mRNAs, a non-canonical splicing process promoted by dsRNA structures across circularizing exons.

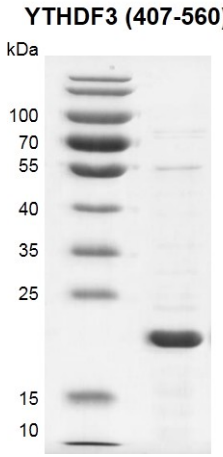
N6-methylated adenine (m6A) is prevalently present in nearly all RNA types and can be found in all organisms from bacteria to humans. It preferentially appears around stop codons and within long internal exons in mammalian messenger RNAs. m6A plays an important role in the efficiency of mRNA splicing, processing, translation efficiency, editing and mRNA stability. m6A also takes place in other RNA molecules, such as primary miRNA (pri-miRNAs).

Protein Details: Recombinant human YTHDF3 (407-560) protein corresponding to amino acids 407-560 that contains the YTH domain sequence of human YTHDF3 (accession number NP_689971.4) was expressed in *E. coli* cells with an N-terminal 6×His tag and a C-terminal Flag tag. The molecular weight of the protein is 22.6 kDa.

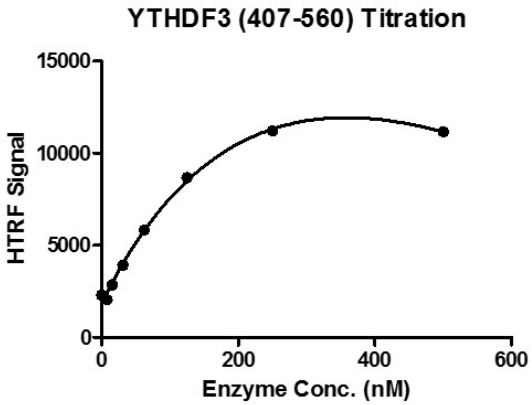
Application Notes: Recombinant YTHDF3 (407-560) protein is suitable for use in the study of enzyme kinetics, inhibitor screening, and selectivity profiling.

Binding Assay Conditions: 3 µM oligo m6A ssDNA (GTTGG/m6A/CTT) was incubated with different concentrations of YTHDF3 (407-560) protein in 10 µl reaction system containing 50 mM HEPES-NaOH pH 7.5, 0.1% BSA for 1 hour, then 10 µl anti-FLAG antibody and SA-XL665 mixture (1:100 dilution in the same buffer) was added to each reaction system and incubated for 30 min. All the operations and reactions were performed at room temperature. HTRF assay was used for detection.

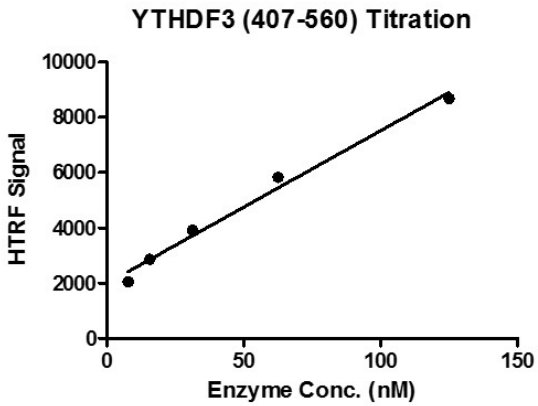
Storage and Guarantee: Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is for research use only and is not for use in diagnostic procedures. This product is guaranteed for 6 months from date of arrival.



Recombinant YTHDF3 (407-560) SDS PAGE gel
13% SDS-PAGE Coomassie staining
MW: 22.6 kDa
Purity: >85%



HTRF for YTHDF3 (407-560) activity
oligo m6A ssDNA (GTTGG/m6A/CTT) was incubated with different concentrations of YTHDF3 (407-560) protein in a reaction system for 1 hour, then FLAG antibody and SA-XL665 mixture (1:100 dilution in the same buffer) was added to each reaction system and incubated for 30 min. All the operations and reactions were performed at room temperature. HTRF assay was used for detection.



HTRF for YTHDF3 (407-560) activity
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