

## Recombinant YTHDF3 protein

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**Catalog No:** 81204, 81904

**Expressed In:** Baculovirus

**Quantity:** 20, 1000 µg

**Concentration:** 0.35 µg/µl

**Source:** Human

**Buffer Contents:** Recombinant YTHDF3 protein is supplied in 25 mM HEPES-NaOH pH 7.5, 300 mM NaCl, 10% glycerol, 0.04% Triton X-100, 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).

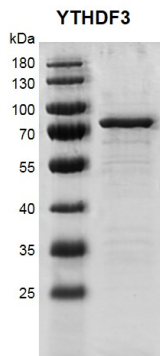
**Protein Details:** Recombinant YTHDF3 protein was expressed in a baculovirus expression system as the full length human protein (accession number NP\_001264742.1) with an N-terminal FLAG-Tag. The molecular weight of the protein is 65.8 kDa.

**Application Notes:** Recombinant YTHDF3 protein is suitable for use in the study of binding assay, inhibitor screening, and selectivity profiling.

HTRF assay was used for analysis of YTHDF3 protein activity

3 µM biotinylated m6A ssDNA oligos (GTTGG/m6A/CTT) were incubated with different concentrations of YTHDF3 protein in a 10 µl system containing 50 mM HEPES-NaOH pH 7.4, 0.1% BSA for 1 hr, then 10 µl FLAG antibody and SA-XL665 mixture (each 1:100 dilution in reaction 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.



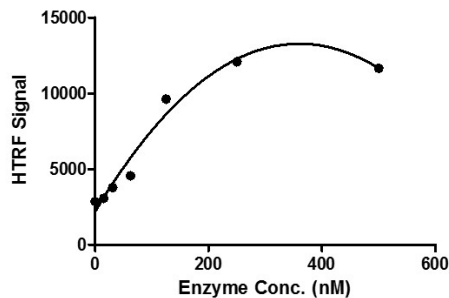
#### Recombinant YTHDF3 protein gel

10% SDS-PAGE with Coomassie blue staining

MW: 65.8 kDa

Purity: >90%

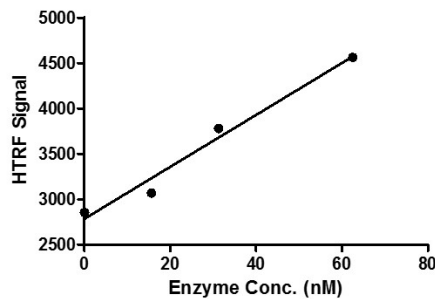
#### YTHDF3 Titration



#### HTRF assay for YTHDF3 protein activity

3  $\mu$ M biotinylated m6A ssDNA oligos (GTTGG/m6A/CTT) were incubated with different concentrations of YTHDF3 protein in a 10  $\mu$ l system containing 50 mM HEPES-NaOH pH 7.4, 0.1% BSA for 1 hr, then 10  $\mu$ l FLAG antibody and SA-XL665 mixture (each 1:100 dilution in reaction 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.

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