abcam

ab290734

Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody [EPR26183-69]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR26183-69
Purification technique	Affinity purification Protein A
Concentration	0.502 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Species	Human
Dilution info	1/50
Notes	-

Not recommended

Species	Rat
Dilution info	-
Notes	-

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Species	Human
Dilution info	1/30
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Rat
Dilution info	-
Notes	-

Target data

See full target information YTHDF1

Function	Specifically recognizes and binds N6-methyladenosine (m6A)-containing mRNAs, and regulates their stability (PubMed:24284625, PubMed:26318451, PubMed:32492408, PubMed:39900921). M6A is a modification present at internal sites of mRNAs and some non-coding RNAs and plays a role in mRNA stability and processing (PubMed:24284625, PubMed:32492408). Acts as a regulator of mRNA stability by promoting degradation of m6A-containing mRNAs via interaction with the CCR4-NOT complex (PubMed:32492408). The YTHDF paralogs (YTHDF1, YTHDF2 and YTHDF3) shares m6A-containing mRNAs targets and act redundantly to mediate mRNA degradation and cellular differentiation (PubMed:28106072, PubMed:32492408). Required to facilitate learning and memory formation in the hippocampus by binding to m6A-containing neuronal mRNAs (By similarity). Acts as a regulator of axon guidance by binding to m6A-containing ROBO3 transcripts (By similarity). Acts as a negative regulator of antigen cross-presentation in myeloid dendritic cells (By similarity). In the context of tumorigenesis, negative regulation of antigen cross-presentation limits the anti-tumor response by reducing efficiency of tumor-antigen cross-presentation (By similarity). Promotes formation of phase-separated membraneless compartments, such as P-bodies or stress granules, by undergoing liquid-liquid phase separation upon binding to mRNAs containing multiple m6A-modified residues: polymethylated mRNAs act as a multivalent scaffold for the binding of YTHDF proteins, juxtaposing their disordered regions and thereby leading to phase separation (PubMed:31292544, PubMed:31388144, PubMed:32451507). The resulting mRNA-YTHDF complexes then partition into different endogenous phase-separated membraneless compartments, such as P-bodies, stress granules or neuronal RNA granules (PubMed:31292544).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For

details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	YTHDF1 YTHDF2 and YTHDF3 also known as YTH domain family proteins are key readers of N6-methyladenosine (m6A) RNA modifications. These proteins each weigh around 63-68 kDa and show expression across various human tissues with notable activity in the brain and liver. YTHDF proteins bind to m6A-modified RNAs facilitating subsequent RNA metabolism processes such as translation and decay. By recognizing m6A marks YTHDF1 2 and 3 influence RNA fate therefore playing an important role in post-transcriptional gene regulation.
Biological function summary	YTHDF proteins facilitate the dynamic control of mRNA stability and translation efficiency. They are known to interact with each other forming complexes that further strengthen their functional impact on RNA targets. In particular YTHDF1 enhances translation by recruiting ribosomes to m6A-modified mRNAs. YTHDF2 primarily targets mRNA for degradation therefore reducing mRNA stability. Meanwhile YTHDF3 supports both YTHDF1-mediated translation and YTHDF2-mediated degradation acting as a versatile mediator in RNA regulation.
Pathways	These proteins play important roles in cellular homeostasis and stress responses. The m6A modification pathway involves collaboration with proteins such as METTL3 and FTO which add and remove m6A marks respectively. The interaction of YTHDF proteins within this pathway allows cells to quickly respond to stimuli by adjusting protein production levels. Their functions align with signaling pathways like the mTOR pathway where they influence translation rates in response to nutrient availability.
Associated diseases and disorders	YTHDF proteins are linked to cancers and neurological conditions. Dysregulation of these proteins associates with tumorigenesis particularly through interactions with oncogenic proteins such as c-Myc. Abnormal YTHDF function also connects to neurodegenerative disorders where alterations in mRNA metabolism lead to neural dysfunction. The ability of YTHDF proteins to bind specific m6A-modified mRNAs makes them targets for therapeutic intervention in these diseases.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

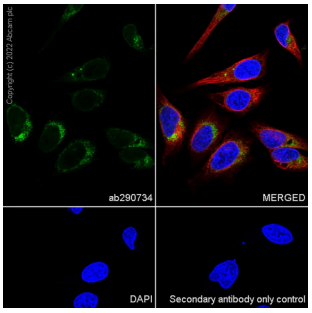
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

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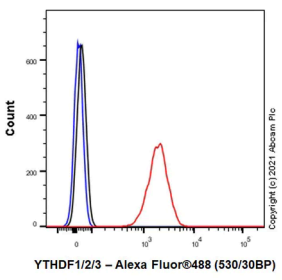
8 product images



Immunocytochemistry/ Immunofluorescence - Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody [EPR26183-69] (ab290734)

YTHDF1 + YTHDF3 + YTHDF2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeilized HeLa (human cervix adenocarcinoma epithelial cell) cells lebelling YTHDF1 + YTHDF2 + YTHDF3 with ab290734 at 1/50 (10.04 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2ug/mL) dilution (Green). Confocal image showing mostly cytoplasmic staining in Hela cell line is observed. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 (2.5ug/ml) dilution (Red). The Nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2ug/mL) dilution.

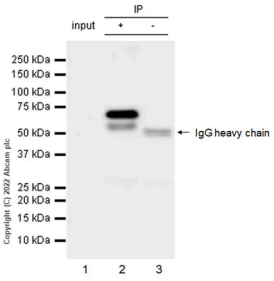


Flow Cytometry (Intracellular) - Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody [EPR26183-69] (ab290734)

YTHDF1 + YTHDF3 + YTHDF2 Flow Cytometry (Intracellular) staining using rabbit Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (Human cervix adenocarcinoma epithelial cell) cells labelling YTHDF1 + YTHDF2 + YTHDF3 with ab290734 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730)

(Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody [EPR26183-69] (ab290734)

YTHDF1 + YTHDF2 + YTHDF3 was immunoprecipitated from 0.35 mg HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate 10 ug ab290734 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using anti YTHDF1 + YTHDF2 + YTHDF3 antibody (ab290734) at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate 10 µg

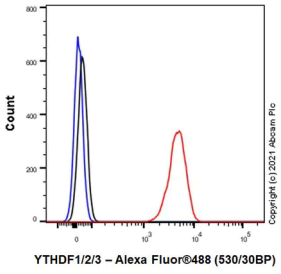
Lane 2: anti YTHDF1 + YTHDF2 + YTHDF3 antibody (ab290734) IP in HeLa whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab290734 in HeLa whole cell lysate

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 15 seconds

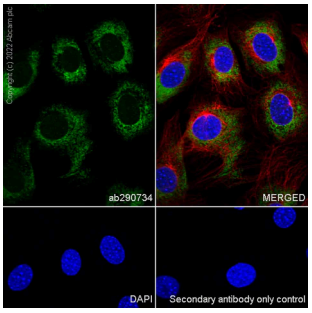
All lanes:
Immunoprecipitation - Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody [EPR26183-69] (ab290734)



Flow Cytometry (Intracellular) - Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody [EPR26183-69] (ab290734)

YTHDF1 + YTHDF3 + YTHDF2 Flow Cytometry (Intracellular) staining using rabbit Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody

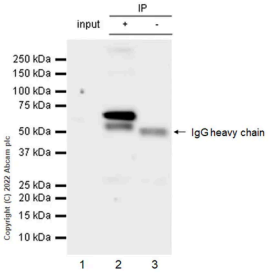
Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized NIH/3T3 (Mouse embryonic fibroblast) cells labelling YTHDF1 + YTHDF2 + YTHDF3 with ab290734 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody [EPR26183-69] (ab290734)

YTHDF1 + YTHDF3 + YTHDF2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody

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Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2ug/mL) dilution.



Immunoprecipitation - Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody [EPR26183-69] (ab290734)

YTHDF1 + YTHDF2 + YTHDF3 was immunoprecipitated from 0.35 mg NIH/3T3 (mouse embryonic fibroblast) whole cell lysate 10 ug with ab290734 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab290734 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.
Lane 1: NIH/3T3 (mouse embryonic fibroblast) whole cell lysate 10 ug

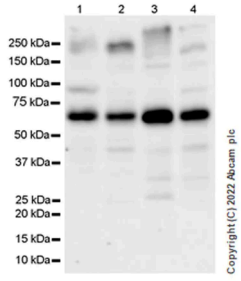
Lane 2: ab290734 IP in NIH/3T3 whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab290734 in NIH/3T3 whole cell lysate

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 15 seconds

All lanes:
Immunoprecipitation - Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody [EPR26183-69] (ab290734)



Western blot - Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody [EPR26183-69] (ab290734)

YTHDF1 + YTHDF3 + YTHDF2 Western blot staining using rabbit Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody

Blocking / Diluent buffer and concentration:5% NFDM/TBST.
Lysates should be made freshly and used in WB immediately to minimize protein degradation.

All lanes:
Western blot - Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody [EPR26183-69] (ab290734) at 1/1000 dilution

Lane 1:
HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate. at 20 µg

Lane 2:
293T (human embryonic kidney epithelial cell) whole cell lysate. at 20 µg

Lane 3:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate. at 20 µg

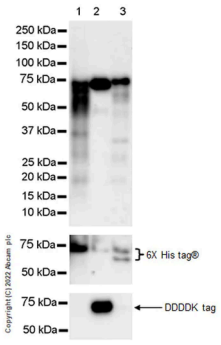
Lane 4:
PC-12 (rat adrenal gland pheochromocytoma) whole cell lysate. at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 61 kDa

Exposure time: 70s



Western blot - Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody [EPR26183-69] (ab290734)

Blocking / Diluting buffer and concentration: 5% NFDM/TBST
All lanes:
Western blot - Anti-YTHDF1 + YTHDF3 + YTHDF2 antibody [EPR26183-69] (ab290734) at 1/1000 dilution

Lane 1:
His-tagged human YTHDF1 recombinant protein 10ng

Lane 2:
His-tagged human YTHDF2 recombinant protein 10ng

Lane 3:
His-tagged human YTHDF3 recombinant protein 10ng

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Observed band size: 61 kDa

Exposure time: 70s

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.