abcam

ab220160

Anti-YTHDC2 antibody [EPR21820-49]

Recombinant | RabMAb | KO Validated

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	EPR21820-49
Purification technique	Affinity purification Protein A
Concentration	0.54 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Expected

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

Predicted

Species	Cow, Pig, Primates
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Predicted

Species	Cow, Pig, Primates
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Human, Mouse, Rat, Cow, Pig, Primates
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Species	Rat
Dilution info	1/50
Notes	-

Expected

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

Predicted

Species	Cow, Pig, Primates
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/600
Notes	-

Expected

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

Predicted

Species	Cow, Pig, Primates
Dilution info	-
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Species	Rat
Dilution info	1/500
Notes	-

Species	Human
Dilution info	1/500
Notes	-

Predicted

Species	Cow, Pig, Primates
Dilution info	-
Notes	-

Target data

See full target information YTHDC2

Function	3'-5' RNA helicase that plays a key role in the male and female germline by promoting transition from mitotic to meiotic divisions in stem cells (PubMed:26318451, PubMed:29033321, PubMed:29970596). Specifically recognizes and binds N6-methyladenosine (m6A)-containing RNAs, a modification present at internal sites of mRNAs and some non-coding RNAs that plays a role in the efficiency of RNA processing and stability (PubMed:26318451, PubMed:29033321). Essential for ensuring a successful progression of the meiotic program in the germline by regulating the level of m6A-containing RNAs (By similarity). Acts by binding and promoting degradation of m6A-containing mRNAs: the 3'-5' RNA helicase activity is required for this process and RNA degradation may be mediated by XRN1 exoribonuclease (PubMed:29033321). Required for both spermatogenesis and oogenesis (By similarity).

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	YTHDC2 also known as YT521-B homology domain containing 2 functions as an RNA helicase with a molecular mass of approximately 160 kDa. This protein modulates RNA metabolism by promoting the efficient translation of mRNAs. It shows enriched expression in the testis as well as notable levels in immune cells and possibly in other tissues. Its involvement in the recognition and binding of N6-methyladenosine (m6A)-modified RNA substrates makes YTHDC2 a significant factor in RNA processing.
Biological function summary	YTHDC2 contributes to the regulation of mRNA stability and turnover within the cell. It may operate as part of a complex involved in post-transcriptional control. Through these actions YTHDC2 influences processes such as meiosis and the differentiation of germ cells supported by its association with m6A reader proteins. This association plays a role in the recognition of specific m6A marks critical for RNA dynamics.
Pathways	YTHDC2 integrates into the m6A-dependent RNA decay and translation machinery. One important pathway involving this protein is the m6A-mediated gene expression regulation pathway. Within this context YTHDC2 interacts closely with other m6A machinery components such as METTL3 and bridges mRNA modification with subsequent cellular outcomes. Another related pathway is spermatogenesis where the precise control by YTHDC2 is necessary for successful meiosis via interaction with various meiotic proteins.
Associated diseases and disorders	Aberrant regulation or expression of YTHDC2 links to infertility as proper expression is necessary for normal germ cell development. This condition involves its association with other reproductive proteins such as those functioning in meiosis. Disorders in mRNA metabolism potentially leading to cancer might also implicate YTHDC2 due to its broad role in regulating mRNA stability and translation highlighting the need to understand its interactions with tumor-related pathways.

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

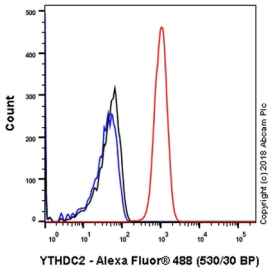
We do not recommend this combination. It is not covered by our product promise.

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.

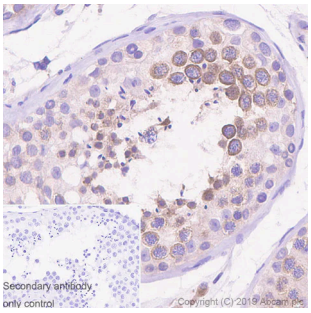
11 product images



Flow Cytometry (Intracellular) - Anti-YTHDC2 antibody [EPR21820-49] (ab220160)

YTHDC2 Flow Cytometry (Intracellular) staining using rabbit Anti-YTHDC2 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (human cervix adenocarcinoma epithelial cell) cells labelling YTHDC2 with ab220160 at 1/600 (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, ab150077) at 1/2000 dilution was used as the secondary antibody.

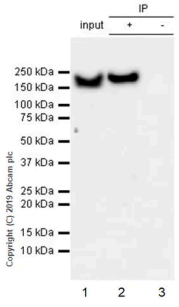


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-YTHDC2 antibody [EPR21820-49] (ab220160)

YTHDC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-YTHDC2 antibody

Immunohistochemical analysis of paraffin-embedded Human testis tissue labeling YTHDC2 with ab220160 at 1/500 dilution (1.19 ug/ml) followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Cytoplasmic staining on human testis (PMID:28380054). Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).

Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



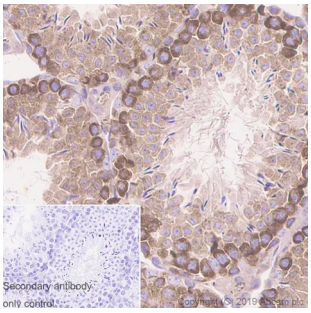
Immunoprecipitation - Anti-YTHDC2 antibody [EPR21820-49] (ab220160)

YTHDC2 was immunoprecipitated from 0.35 mg of HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate with ab220160 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab220160 at 1/1000 dilution. VeriBlot for IP secondary antibody (HRP) (ab131366), was used as secondary antibody at 1/5000 dilution.
Lane 1: HeLa whole cell lysate 10 µ (Input).
Lane 2: ab220160IP in HeLa whole cell lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab220160 in HeLa whole cell lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 30 seconds.
All lanes:
Immunoprecipitation - Anti-YTHDC2 antibody [EPR21820-49] (ab220160)

Predicted band size: 160 kDa

Observed band size: 160 kDa

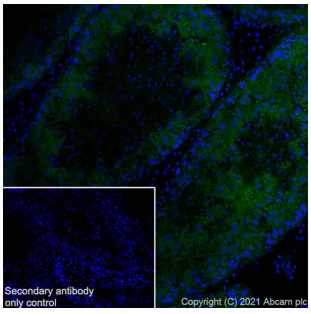


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-YTHDC2 antibody [EPR21820-49] (ab220160)

YTHDC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-YTHDC2 antibody

Immunohistochemical analysis of paraffin-embedded Mouse testis tissue labeling YTHDC2 with ab220160 at 1/500 dilution (1.19 ug/ml) followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Cytoplasmic staining on mouse testis (PMID:28380054). Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).

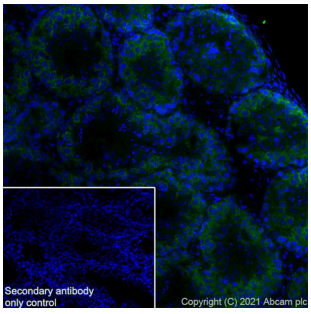
Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



Immunohistochemistry (Frozen sections) - Anti-YTHDC2 antibody [EPR21820-49] (ab220160)

YTHDC2 Immunohistochemistry (Frozen sections) staining using rabbit Anti-YTHDC2 antibody

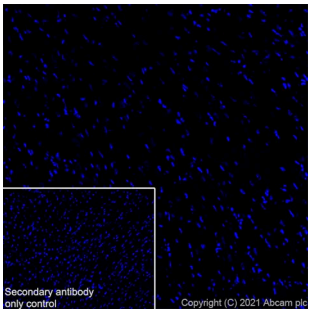
Immunohistochemical analysis of 4% paraformaldehyde fixed, 0.2% Triton X-100 permeabilised rat testis tissue labeling YTHDC2 with ab220160 at 1/50 dilution (11 ug/mL). Followed by ab150077 AlexaFluor®488 Goat anti-Rabbit secondary antibody at 1/1000 dilution (2 ug/mL). Showing cytoplasmic staining on rat testis. Nuclear counterstain: DAPI.



Immunohistochemistry (Frozen sections) - Anti-YTHDC2 antibody [EPR21820-49] (ab220160)

YTHDC2 Immunohistochemistry (Frozen sections) staining using rabbit Anti-YTHDC2 antibody

Immunohistochemical analysis of 4% paraformaldehyde fixed, 0.2% Triton X-100 permeabilised mouse testis tissue labeling YTHDC2 with ab220160 at 1/50 dilution (11 ug/mL). Followed by ab150077 AlexaFluor®488 Goat anti-Rabbit secondary antibody at 1/1000 dilution (2 ug/mL). Showing cytoplasmic staining on mouse testis. Nuclear counterstain: DAPI.

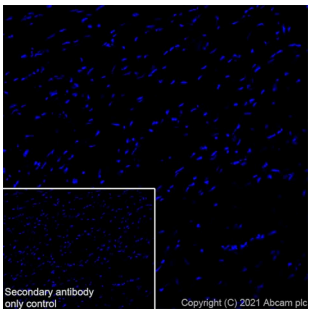


Immunohistochemistry (Frozen sections) - Anti-YTHDC2 antibody [EPR21820-49] (ab220160)

YTHDC2 Immunohistochemistry (Frozen sections) staining using rabbit Anti-YTHDC2 antibody

Negative control: (PMID: 29087293)
Immunohistochemical analysis of 4% paraformaldehyde fixed, 0.2% Triton X-100 permeabilised mouse heart tissue labeling YTHDC2 with ab220160 at 1/50 dilution (11 ug/mL). Followed by

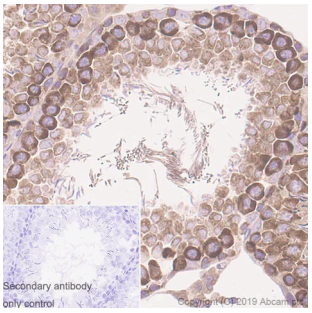
ab150077 AlexaFluor®488 Goat anti-Rabbit secondary antibody at 1/1000 dilution (2 ug/mL). No staining observed on mouse heart. Nuclear counterstain: DAPI.



Immunohistochemistry (Frozen sections) - Anti-YTHDC2 antibody [EPR21820-49] (ab220160)

YTHDC2 Immunohistochemistry (Frozen sections) staining using rabbit Anti-YTHDC2 antibody

Negative control: (PMID: 29087293)
Immunohistochemical analysis of 4% paraformaldehyde fixed, 0.2% Triton X-100 permeabilised rat heart tissue labeling YTHDC2 with ab220160 at 1/50 dilution (11 ug/mL). Followed by ab150077 AlexaFluor®488 Goat anti-Rabbit secondary antibody at 1/1000 dilution (2 ug/mL). No staining observed on rat heart. Nuclear counterstain: DAPI.

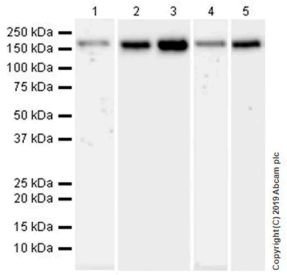


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-YTHDC2 antibody [EPR21820-49] (ab220160)

YTHDC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-YTHDC2 antibody

Immunohistochemical analysis of paraffin-embedded Rat testis tissue labeling YTHDC2 with ab220160 at 1/500 dilution (1.19 ug/ml) followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Cytoplasmic staining on rat testis (PMID:28380054). Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).

Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



Western blot - Anti-YTHDC2 antibody [EPR21820-49] (ab220160)

YTHDC2 Western blot staining using rabbit Anti-YTHDC2 antibody

Blocking and dilution buffer: 5% NFDM/TBST.
Exposure times.

Lane 1: 3 minutes; Lanes 2-3: 37 seconds; Lane 4: 3 minutes; Lane 5: 37 seconds.

All lanes:
Western blot - Anti-YTHDC2 antibody [EPR21820-49] (ab220160) at 1/1000 dilution

Lane 1:
HT-1080 (human fibrosarcoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
HEK-293 (human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 4:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 20 µg

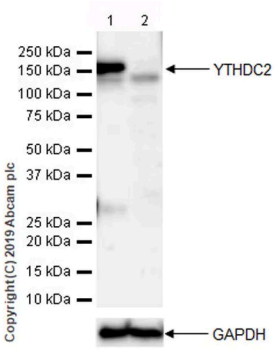
Lane 5:
PC-12 (rat adrenal gland pheochromocytoma) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 160 kDa

Observed band size: 160 kDa



Western blot - Anti-YTHDC2 antibody [EPR21820-49] (ab220160)

YTHDC2 Western blot staining using rabbit Anti-YTHDC2 antibody

Blocking and dilution bufer: 5% NFDM/TBST.
The wild-type and YTHDC2 knockout cell lysates were kindly provided by an anonymous collaborator.

ab220160 was shown to specifically react with YTHDC2 in wild-type mESC cells as signal was lost in YTHDC2 knockout cells. Wild-type and YTHDC2 knockout samples were subjected to SDS-PAGE. ab220160 and ab181602 (Rabbit anti-GAPDH loading control) were incubated 1 hour at room temperature at 1/1000 dilution and 1/200,000 dilution respectively. Blots were developed with Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) secondary antibody at 1/100,000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-YTHDC2 antibody [EPR21820-49] (ab220160) at 1/1000 dilution

Lane 1:
Wild-type mESC (mouse embryo stem cell) whole cell lysate at 40 µg

Lane 2:
YTHDC2 knockout mESC whole cell lysate at 40 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 160 kDa

Observed band size: 160 kDa

Exposure time: 3min

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