abcam

ab289857

Anti-PUS7 antibody [EPR25172-31]

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	EPR25172-31
Purification technique	Affinity purification Protein A
Specificity	This antibody does not react with Human species for IHC, ICC and FC application.
Concentration	0.701 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Mouse
Dilution info	1/100
Notes	-

Expected

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

Not recommended

Species	Human
Dilution info	-
Notes	-

IP

Not recommended

Species	Mouse, Human, Rat
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	-

IHC-P

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Not recommended

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Expected

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

Not recommended

Species	Human
Dilution info	-

Notes	-

Target data

See full target information PUS7

Function	Pseudouridylate synthase that catalyzes pseudouridylation of RNAs (PubMed:28073919, PubMed:29628141, PubMed:30778726, PubMed:31477916, PubMed:34718722, PubMed:35051350). Acts as a regulator of protein synthesis in embryonic stem cells by mediating pseudouridylation of RNA fragments derived from tRNAs (tRFs): pseudouridylated tRFs inhibit translation by targeting the translation initiation complex (PubMed:29628141). Also catalyzes pseudouridylation of mRNAs: mediates pseudouridylation of mRNAs with the consensus sequence 5'-UGUAG-3' (PubMed:28073919, PubMed:31477916, PubMed:35051350). Acts as a regulator of pre-mRNA splicing by mediating pseudouridylation of pre-mRNAs at locations associated with alternatively spliced regions (PubMed:35051350). Pseudouridylation of pre-mRNAs near splice sites directly regulates mRNA splicing and mRNA 3'-end processing (PubMed:35051350). In addition to mRNAs and tRNAs, binds other types of RNAs, such as snRNAs, Y RNAs and vault RNAs, suggesting that it can catalyze pseudouridylation of many RNA types (PubMed:29628141).

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	Pseudouridine synthase 7 (PUS7) also known as PUS7L or pseudouridylate synthase 7 is an enzyme that catalyzes the isomerization of uridine to pseudouridine in RNA molecules. It has a molecular weight of approximately 80 kDa. This protein is highly conserved and widely expressed in various cell types including in tissues like the brain liver and testes. PUS7 is present in the nucleus where it modifies specific uridines in rRNA tRNA and snRNA impacting their stability and function.
Biological function summary	PUS7 participates in the post-transcriptional modification of RNA which is critical for RNA maturation and function. This enzyme does not work in isolation; it interacts with other components of the RNA modification machinery. PUS7's activity enhances the structural stability of RNA molecules and affects the efficiency of protein synthesis by modifying RNA substrates fine-tuning their roles in processes like translation and splicing.
Pathways	PUS7 is involved in the RNA modification and processing pathways specifically those related to ribosome biogenesis and mRNA splicing. These pathways are central to the synthesis and maturation of various RNA species ensuring proper protein production. PUS7 interacts closely with proteins like fibrillarin in the nucleolus during rRNA processing and U2 auxiliary factor in mRNA splicing aligning with transcription dynamics and ribosome assembly.
Associated diseases and disorders	Aberrant PUS7 function associates with certain neurodevelopmental disorders and cancers. Alterations in PUS7 activity can disrupt normal RNA processing leading to defects in brain development and function notably in conditions such as intellectual disability. The enzyme's altered function also relates to cancer where dysregulated RNA modification contributes to tumorigenesis. Proteins connected with these disorders like dyskerin and U2AF65 interact with PUS7 highlighting its involvement in disease mechanisms.

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.

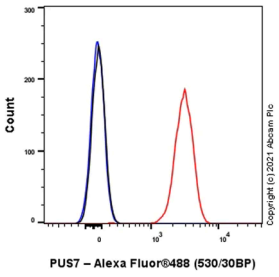
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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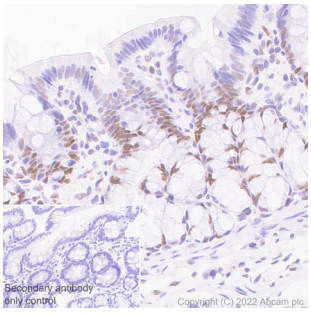
6 product images



Flow Cytometry (Intracellular) - Anti-PUS7 antibody [EPR25172-31] (ab289857)

PUS7 Flow Cytometry (Intracellular) staining using rabbit Anti-PUS7 antibody

Flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methonol-permeabilised NIH/3T3 (Mouse embryonic fibroblast cell line) cells labelling PUS7 with ab289857 at 1/500 dilution (Red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (Black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150081) at 1/2000 dilution was used as the secondary antibody.



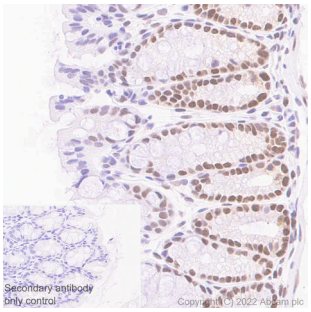
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PUS7 antibody [EPR25172-31] (ab289857)

Immunohistochemical analysis of paraffin-embedded rat colon tissue lysate labeling PUS7 at 1/1000 (1.374µg/ml), followed by LeicaDS9800 (BOND™ Polymer Refine Detection). Nuclear staining on rat colon. The section was incubated with ab289857 for 30 mins at room temperature.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counter stained with Hematoxylin.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins was used.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is LeicaDS9800 (Bond™ Polymer Refine Detection).

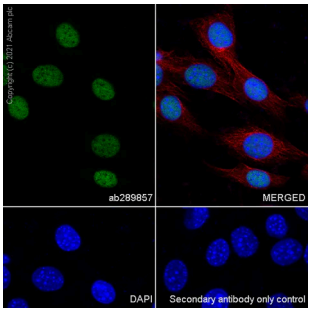


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PUS7 antibody [EPR25172-31] (ab289857)

Immunohistochemical analysis of paraffin-embedded mouse colon tissue lysate labeling PUS7 at 1/1000 (1.374µg/ml), followed by LeicaDS9800 (BOND™ Polymer Refine Detection). Nuclear staining on mouse colon. The section was incubated with ab289857 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counter stained with Hematoxylin.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins was used.

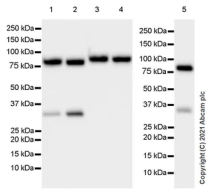
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is LeicaDS9800 (Bond™ Polymer Refine Detection



Immunocytochemistry/ Immunofluorescence - Anti-PUS7 antibody [EPR25172-31] (ab289857)

Immunofluorescent analysis of 100% methanol-fixed, 0.1% Triton X-100 permeabilized NIH/3T3 (mouse embryonic fibroblast cell line) cells labeling PUS7 with ab289857 at 1/100 dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed secondary antibody at 1/1000 dilution (Green). Confocal image showing nuclear staining in NIH/3T3 cell line. The nuclear counterstain is DAPI (Blue). Tubulin is labeled using ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) at 1/200 dilution (Red).

Secondary antibody only control: Used PBS instead of primary antibody, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed secondary antibody at 1/1000 dilution.



Western blot - Anti-PUS7 antibody [EPR25172-31] (ab289857)

PUS7 Western blot staining using rabbit Anti-PUS7 antibody

5% NFDM/TBST was used as blocking and diluting buffer.
Lysates were prepared from fresh material and used for Western blotting immediately to minimize protein degradation.
We observe an unknown band at around 37kDa.

All lanes:
Western blot - Anti-PUS7 antibody [EPR25172-31] (ab289857) at 1/1000 dilution

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

Lane 2:
HEK-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

Lane 5:
HCT116 (human colorectal carcinoma epithelial cell) whole cell lysate at 20 µg

Secondary

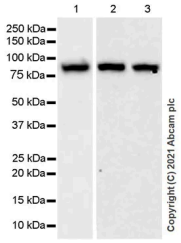
All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 75 kDa

Observed band size: 34 kDa, 75 kDa

Exposure time: 15s

Western blot - Anti-PUS7 antibody [EPR25172-31] (ab289857)



PUS7 Western blot staining using rabbit Anti-PUS7 antibody

5% NFDM/TBST was used as blocking and diluting buffer.
Exposure times:

Lane 1: 81 seconds
Lanes 2-3: 180 seconds

All lanes:
Western blot - Anti-PUS7 antibody [EPR25172-31] (ab289857) at 1/1000 dilution

Lane 1:
Mouse liver tissue lysate at 20 µg

Lane 2:
Rat pancreas tissue lysate at 20 µg

Lane 3:
Rat liver tissue lysate at 20 µg

Secondary

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

Predicted band size: 75 kDa

Observed band size: 75 kDa

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