abcam

ab92545

Anti-Pumilio 1 antibody [EPR3795]

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	EPR3795
Purification technique	Affinity purification Protein A
Specificity	This antibody is predicted to not cross react with Pumilio 2.
Concentration	0.129 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000 - 1/5000
Notes	-

Species	Human
Dilution info	1/1000 - 1/5000
Notes	-

Species	Rat
Dilution info	1/1000 - 1/5000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/500
Notes	**For unpurified use at 1/100 - 1/250.**

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20

Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. For unpurified use at 1/100.

Expected

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

IHC-P

Tested

Species	Human
Dilution info	1/100
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information PUM1

Function	Sequence-specific RNA-binding protein that acts as a post-transcriptional repressor by binding the 3'-UTR of mRNA targets. Binds to an RNA consensus sequence, the Pumilio Response Element (PRE), 5'-UGUANAUA-3', that is related to the Nanos Response Element (NRE) (PubMed:18328718, PubMed:21397187, PubMed:21572425, PubMed:21653694). Mediates post-transcriptional repression of transcripts via different mechanisms: acts via direct recruitment of the CCR4-POP2-NOT deadenylase leading to translational inhibition and mRNA degradation (PubMed:22955276). Also mediates deadenylation-independent repression by promoting accessibility of miRNAs (PubMed:18776931, PubMed:20818387, PubMed:20860814, PubMed:22345517). Following growth factor stimulation, phosphorylated and binds to the 3'-UTR of CDKN1B/p27 mRNA, inducing a local conformational change that exposes miRNA-binding sites, promoting association of miR-221 and miR-222, efficient suppression of CDKN1B/p27 expression, and rapid entry to the cell cycle (PubMed:20818387). Acts as a post-transcriptional repressor of E2F3 mRNAs by binding to its 3'-UTR and facilitating miRNA regulation

(PubMed:22345517, PubMed:29474920). Represses a program of genes necessary to maintain genomic stability such as key mitotic, DNA repair and DNA replication factors. Its ability to repress those target mRNAs is regulated by the lncRNA NORAD (non-coding RNA activated by DNA damage) which, due to its high abundance and multitude of PUMILIO binding sites, is able to sequester a significant fraction of PUM1 and PUM2 in the cytoplasm (PubMed:26724866). Involved in neuronal functions by regulating ATXN1 mRNA levels: acts by binding to the 3'-UTR of ATXN1 transcripts, leading to their down-regulation independently of the miRNA machinery (PubMed:25768905, PubMed:29474920). Plays a role in cytoplasmic sensing of viral infection (PubMed:25340845). In testis, acts as a post-transcriptional regulator of spermatogenesis by binding to the 3'-UTR of mRNAs coding for regulators of p53/TP53. Involved in embryonic stem cell renewal by facilitating the exit from the ground state: acts by targeting mRNAs coding for naive pluripotency transcription factors and accelerates their down-regulation at the onset of differentiation (By similarity). Binds specifically to miRNA MIR199A precursor, with PUM2, regulates miRNA MIR199A expression at a postranscriptional level (PubMed:28431233).

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.

Species reactivity
Rat: We have preliminary internal testing data to indicate this antibody may not react with this species. Please contact us for more information.

Supplementary info

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

Activity summary	Pumilio 1 also known as PUM1 is a human protein coding for RNA-binding protein involved in the translational regulation of mRNA. It has a molecular weight of approximately 120 kDa. PUM1 expresses in various tissues with higher concentrations in brain placenta and testis. This protein contains a distinct Pumilio Homology Domain which allows it to specifically recognize and bind to a conserved sequence motif known as Pumilio Response Element (PRE) in target mRNAs.
Biological function summary	PUM1 is an important regulator of gene expression. It functions by binding to the 3' untranslated regions of target mRNAs leading to repression of translation and in some cases RNA decay. PUM1 operates within larger ribonucleoprotein complexes collaborating with other regulatory proteins to fine-tune the stability and translation of specific transcripts. This regulation is vital for processes like neuronal development stem cell maintenance and germ cell development.
Pathways	The influence of PUM1 extends to key biological networks such as the cell cycle and long-term potentiation pathways. It interacts with proteins like DDX6 which synergize to mediate post-transcriptional regulation as part of the mRNA decay pathway. Through its role in these pathways PUM1 helps ensure precise control of gene expression necessary for cellular homeostasis and adaptive responses to environmental changes.
Associated diseases and disorders	The dysfunction of PUM1 is linked to neurological and reproductive conditions. Mutations or alterations in PUM1 expression have associations with spinocerebellar ataxia and gonadal dysgenesis. In these contexts PUM1 aberrations may also involve interactions with proteins such as FMRP known for its roles in neurological development and reproductive processes pointing to a complex network of genetic regulation and disease manifestation.

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

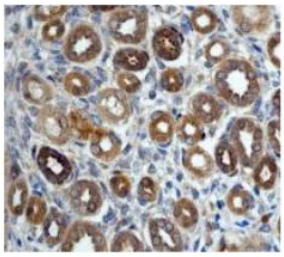
We do not recommend this combination. It is not covered by our product promise.

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.

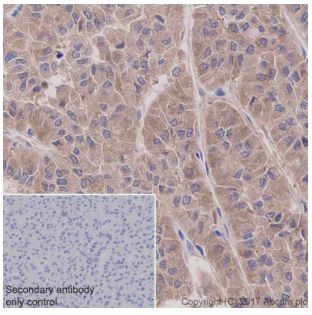
10 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Pumilio 1 antibody [EPR3795] (ab92545)

Pumilio 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Pumilio 1 antibody

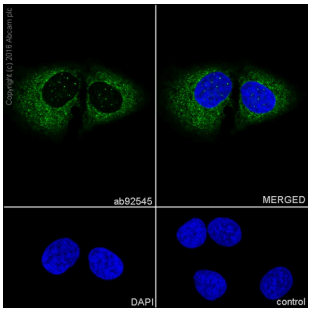
Immunohistochemical analysis of Pumilio 1 in paraffin embedded Human fetal kidney tissue using an unpurified ab92545 at a 1/100 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Pumilio 1 antibody [EPR3795] (ab92545)

Pumilio 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Pumilio 1 antibody

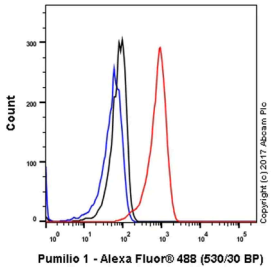
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human thyroid carcinoma tissue sections labeling Pumilio 1 with Purified ab92545 at 1:100 dilution (1.18 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer pH 9.0). Tissue was counterstained with Hematoxylin. ImmunoHistoProbe one step HRP Polymer (ready to use) secondary antibody was used at 1:0 dilution. PBS instead of the primary antibody was used as the negative control.



Immunocytochemistry/ Immunofluorescence - Anti-Pumilio 1 antibody [EPR3795] (ab92545)

Pumilio 1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Pumilio 1 antibody

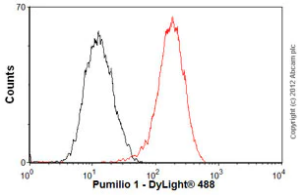
Immunocytochemistry/ Immunofluorescence analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling Pumilio 1 with purified ab92545 at 1:500 dilution (0.2µg/ml). Cells were fixed in 100% Methanol. ab150077 Goat anti rabbit IgG(Alexa Fluor® 488) was used as the secondary antibody at 1:1000 dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Flow Cytometry (Intracellular) - Anti-Pumilio 1 antibody [EPR3795] (ab92545)

Pumilio 1 Flow Cytometry (Intracellular) staining using rabbit Anti-Pumilio 1 antibody

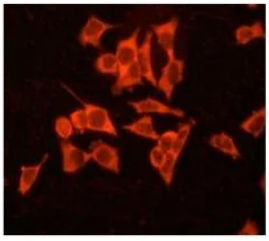
Intracellular Flow Cytometry analysis of HEK-293 (Human embryonic kidney epithelial cell) cells labeling Pumilio 1 with purified ab92545 at 1/20 dilution (10 ug/ml) (red). Cells were fixed with 4% Paraformaldehyde and permeabilized with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluorr® 488) secondary antibody was used at 1/2000 dilution. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Flow Cytometry (Intracellular) - Anti-Pumilio 1 antibody [EPR3795] (ab92545)

Pumilio 1 Flow Cytometry (Intracellular) staining using rabbit Anti-Pumilio 1 antibody

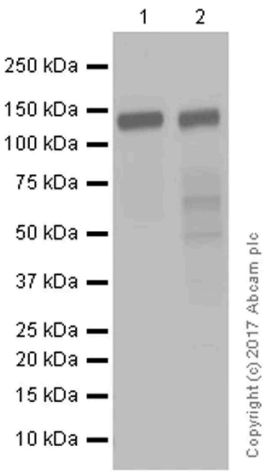
Overlay histogram showing HEK293 cells stained with an unpurified ab92545 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab92545, 1/100 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rabbit IgG (H+L) (ab96899) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in HEK293 cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.



Immunocytochemistry/ Immunofluorescence - Anti-Pumilio 1 antibody [EPR3795] (ab92545)

Pumilio 1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Pumilio 1 antibody

Immunofluorescent staining of Pumilio 1 in HeLa cells using an unpurified ab92545 at a 1/100 dilution.



Western blot - Anti-Pumilio 1 antibody [EPR3795] (ab92545)

Blocking and diluting buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-Pumilio 1 antibody [EPR3795] (ab92545) at 1/5000 dilution

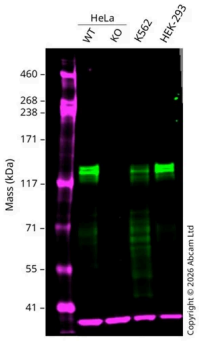
Lane 1:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
HEK-293 (Human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Secondary

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

Predicted band size: 126 kDa



Western blot - Anti-Pumilio 1 antibody [EPR3795] (ab92545)

Pumilio 1 Western blot staining using rabbit Anti-Pumilio 1 antibody

Western blot: Anti-Pumilio 1 antibody [EPR3795] ab92545 staining at 1/1000 dilution, shown in green; Mouse anti GAPDH ab8245 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 140 kDa in Wild-type HeLa cell lysates with no signal observed at this size in PUM1 knockout HeLa cell line. To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 5% Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit 800CW and Goat anti-Mouse 680RD at 1/20,000 dilution.
All lanes:
Western blot - Anti-Pumilio 1 antibody [EPR3795] (ab92545) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysates at 20 µg

Lane 2:
Western blot - Human PUM1 (Pumilio 1) knockout HeLa cell line (ab265285) at 20 µg

Lane 3:
K562 cell lysates at 20 µg

Lane 4:
HEK-293 cell lysates at 20 µg

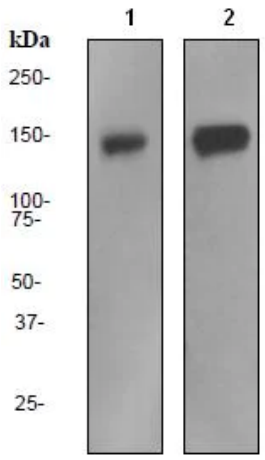
Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 140 kDa

Observed band size: 140 kDa



Western blot - Anti-Pumilio 1 antibody [EPR3795] (ab92545)

All lanes:
Western blot - Anti-Pumilio 1 antibody [EPR3795] (ab92545) at 1/1000 dilution

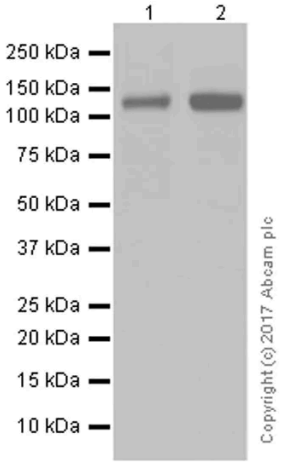
Lane 1:
HeLa cell lysate at 10 µg

Lane 2:
293T cell lysates at 10 µg

Secondary

All lanes:
Standard HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 126 kDa



Western blot - Anti-Pumilio 1 antibody [EPR3795] (ab92545)

Pumilio 1 Western blot staining using rabbit Anti-Pumilio 1 antibody

Blocking and diluting buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-Pumilio 1 antibody [EPR3795] (ab92545) at 1/1000 dilution

Lane 1:
Mouse cerebellum tissue lysate at 20 µg

Lane 2:
Rat brain tissue lysate at 20 µg

Secondary

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

Predicted band size: 126 kDa

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