abcam

ab170915

Anti-EIF5 antibody [EPR12140(B)]

Recombinant | RabMAb

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	EPR12140(B)
Purification technique	Affinity purification Protein A
Concentration	0.674 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/50 - 1/100
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information Eukaryotic translation initiation factor 5

Function

Component of the 43S pre-initiation complex (43S PIC), which binds to the mRNA cap-proximal region, scans mRNA 5'-untranslated region, and locates the initiation codon (PubMed:11166181, PubMed:22813744, PubMed:24319994). In this complex, acts as a GTPase-activating protein, by promoting GTP hydrolysis by eIF2G (EIF2S3) (PubMed:11166181). During scanning, interacts with both EIF1 (via its C-terminal domain (CTD)) and EIF1A (via its NTD) (PubMed:22813744). This interaction with EIF1A contributes to the maintenance of EIF1 within the open 43S PIC (PubMed:24319994). When start codon is recognized, EIF5, via its NTD, induces eIF2G (EIF2S3) to hydrolyze the GTP (PubMed:11166181). Start codon recognition also induces a conformational change of the PIC to a closed state (PubMed:22813744). This change increases the affinity of EIF5-CTD for EIF2-beta (EIF2S2), which allows the release, by an indirect mechanism, of EIF1 from the PIC (PubMed:22813744). Finally, EIF5 stabilizes the PIC in its closed conformation (PubMed:22813744).

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	The eukaryotic translation initiation factor 5 (EIF5) plays an important role in the initiation phase of protein synthesis. EIF5 also known as eIF-5 is a protein that exhibits a molecular weight of approximately 49 kDa. It functions as a GTPase-activating protein that triggers the hydrolysis of GTP bound to the eukaryotic initiation factor 2 (eIF2) an essential step for the formation of the 80S ribosome complex during translation. EIF5 expression occurs widely across various tissues indicating its necessity for basic cellular functions.
Biological function summary	EIF5 facilitates the translation initiation process which is critical for protein synthesis. It is an integral component of the multifactor eIF2 complex that ensures the accuracy of start codon recognition in mRNA. This complex assembly involves the association with other initiation factors like eIF1 and eIF3 orchestrating mRNA scanning and the selection of the start site for protein synthesis. EIF5's role in regulating protein biosynthesis links it to the maintenance of cellular homeostasis.

Pathways	EIF5 serves a critical part in the translation initiation pathway. This pathway is essential for general protein biosynthesis directly impacting cellular growth and proliferation. It closely collaborates with related factors like eIF2 and eIF2B within this pathway to modulate translation in response to cellular stress and nutrient availability. Additionally EIF5 intersects the mTOR signaling pathway where it interacts with proteins that coordinate cell growth and metabolism under various physiological conditions.
Associated diseases and disorders	EIF5 alterations can lead to disruptions in protein synthesis connecting it to certain human diseases like cancer. Some studies indicate a link between EIF5 dysregulation and tumorigenesis as faults in translation regulation can drive abnormal cell proliferation. Beyond cancer EIF5 may also intersect with neurodegenerative diseases given the translation regulation's importance in neuronal function. It can associate with other factors such as eIF2α wherein heightened EIF5 activity influences stress responses pivotal in disease contexts.

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

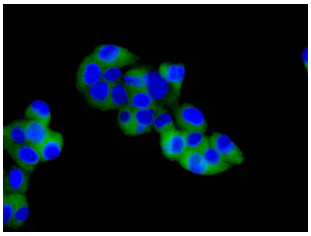
We do not recommend this combination. It is not covered by our product promise.

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.

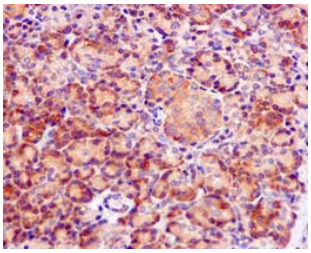
4 product images



Immunocytochemistry/ Immunofluorescence - Anti-EIF5 antibody [EPR12140(B)] (ab170915)

EIF5 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-EIF5 antibody

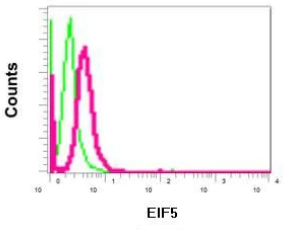
Immunofluorescence analysis of HepG2 cells labeling EIF5 with ab170915 at 1/100 dilution (green). DAPI nuclear staining (blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-EIF5 antibody [EPR12140(B)] (ab170915)

EIF5 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-EIF5 antibody

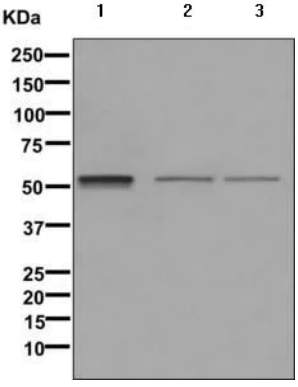
Immunohistochemical analysis of paraffin-embedded Human pancreas tissue labeling EIF5 with ab170915 at 1/50 dilution.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-EIF5 antibody [EPR12140(B)] (ab170915)

EIF5 Flow Cytometry (Intracellular) staining using rabbit Anti-EIF5 antibody

Intracellular flow cytometric analysis of permeabilized K562 cells labeling EIF5 with ab170915 at 1/100 dilution (red) compared toa rabbit IgG negative control (green).



Western blot - Anti-EIF5 antibody [EPR12140(B)] (ab170915)

EIF5 Western blot staining using rabbit Anti-EIF5 antibody

All lanes:
Western blot - Anti-EIF5 antibody [EPR12140(B)] (ab170915) at 1/1000 dilution

Lane 1:
K562 cell lysate at 10 µg

Lane 2:
HeLa cell lysate at 10 µg

Lane 3:
HepG2 cell lysate at 10 µg

Secondary

All lanes:
Goat anti-rabbit HRP-conjugated at 1/2000 dilution

Predicted band size: 49 kDa

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