abcam

ab249587

# Anti-EIF5 antibody [EPR12140(B)] - BSA and Azide free

Recombinant | RabMAb

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Storage buffer** | pH: 7.2 - 7.4 Constituents: PBS |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Carrier free** | Yes |
| **Clone number** | EPR12140(B) |
| **Purification technique** | Affinity purification |
| **Concentration** | 1.012 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

### IHC-P

#### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |

| | |
|---|---|
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## ICC/IF

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## IP

### Not recommended

| | |
|---|---|
| **Species** | Human, Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## WB

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## Flow Cyt (Intra)

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | - |

### 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** | Blue Ice |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | +4°C |
| **Storage information** | Do Not Freeze |

## Notes

ab249587 is the carrier-free version of ab170915.

**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.

**Conjugation ready**

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

**Compatibility**

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

## 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**

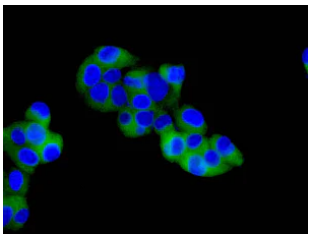
We do not recommend this combination. It is not covered by our product promise.

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.

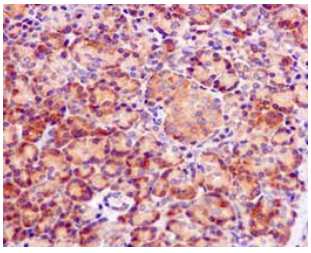
## 4 product images



### Immunocytochemistry/ Immunofluorescence - Anti-EIF5 antibody [EPR12140(B)] - BSA and Azide free (ab249587)

EIF5 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-EIF5 antibody

This data was developed using ab170915, the same antibody clone in a different buffer formulation.
Immunofluorescence analysis of HepG2 cells labeling EIF5 with ab170915 at 1/100 dilution (green). DAPI nuclear staining (blue).

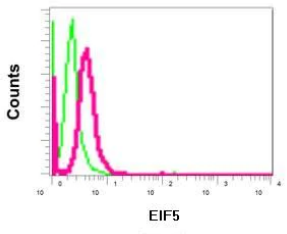


### Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-EIF5 antibody [EPR12140(B)] - BSA and Azide free (ab249587)

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

This data was developed using ab170915, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human pancreas tissue labeling EIF5 with ab170915 at 1/50 dilution.

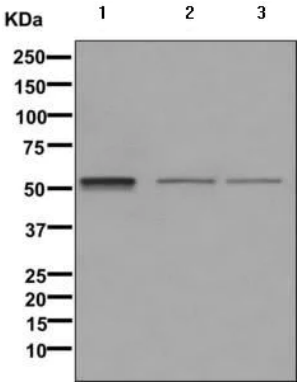
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.




### Flow Cytometry (Intracellular) - Anti-EIF5 antibody [EPR12140(B)] - BSA and Azide free (ab249587)

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

This data was developed using ab170915, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of permeabilized K562 cells labeling EIF5 with ab170915 at 1/100 dilution (red) compared to a rabbit IgG negative control (green).




# Western blot - Anti-EIF5 antibody [EPR12140(B)] - BSA and Azide free (ab249587)

EIF5 Western blot staining using rabbit Anti-EIF5 antibody

This data was developed using ab170915, the same antibody clone in a different buffer formulation.
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'.