abcam

ab221980

# Anti-HIPK2 antibody [EPR3819] - 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** | EPR3819 |
| **Purification technique** | Affinity purification Protein A |
| **Specificity** | The immunogen used for this product shares 69% homology and 6 consecutive amino acids with HIPK1. Cross-reactivity with this protein has not been confirmed experimentally. |
| **Concentration** | 0.994 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

### WB

**Tested**

| | |
|---|---|
| **Species** | Mouse, Human |

| | |
|---|---|
| **Dilution info** | - |
| **Notes** | - |

## IHC-P

### Not recommended

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

## Flow Cyt (Intra)

### Tested

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

### Expected

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

# Target data

See full target information HIPK2

| | |
|---|---|
| **Function** | Serine/threonine-protein kinase involved in transcription regulation, p53/TP53-mediated cellular apoptosis and regulation of the cell cycle. Acts as a corepressor of several transcription factors, including SMAD1 and POU4F1/Brn3a and probably NK homeodomain transcription factors. Phosphorylates PDX1, ATF1, PML, p53/TP53, CREB1, CTBP1, CBX4, RUNX1, EP300, CTNNB1, HMGA1, ZBTB4 and DAZAP2. Inhibits cell growth and promotes apoptosis through the activation of p53/TP53 both at the transcription level and at the protein level (by phosphorylation and indirect acetylation). The phosphorylation of p53/TP53 may be mediated by a p53/TP53-HIPK2-AXIN1 complex. Involved in the response to hypoxia by acting as a transcriptional co-suppressor of HIF1A. Mediates transcriptional activation of TP73. In response to TGFB, cooperates with DAXX to activate JNK. Negative regulator through phosphorylation and subsequent |

proteasomal degradation of CTNNB1 and the antiapoptotic factor CTBP1. In the Wnt/beta-catenin signaling pathway acts as an intermediate kinase between MAP3K7/TAK1 and NLK to promote the proteasomal degradation of MYB. Phosphorylates CBX4 upon DNA damage and promotes its E3 SUMO-protein ligase activity. Activates CREB1 and ATF1 transcription factors by phosphorylation in response to genotoxic stress. In response to DNA damage, stabilizes PML by phosphorylation. PML, HIPK2 and FBXO3 may act synergically to activate p53/TP53-dependent transactivation. Promotes angiogenesis, and is involved in erythroid differentiation, especially during fetal liver erythropoiesis. Phosphorylation of RUNX1 and EP300 stimulates EP300 transcription regulation activity. Triggers ZBTB4 protein degradation in response to DNA damage. In response to DNA damage, phosphorylates DAZAP2 which localizes DAZAP2 to the nucleus, reduces interaction of DAZAP2 with HIPK2 and prevents DAZAP2-dependent ubiquitination of HIPK2 by E3 ubiquitin-protein ligase SIAH1 and subsequent proteasomal degradation (PubMed:33591310). Modulates HMGA1 DNA-binding affinity. In response to high glucose, triggers phosphorylation-mediated subnuclear localization shifting of PDX1. Involved in the regulation of eye size, lens formation and retinal lamination during late embryogenesis.

## 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

ab221980 is the carrier-free version of ab108543.

**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.

**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** | HIPK2 also known as Homeodomain-interacting protein kinase 2 is a serine/threonine kinase with a molecular mass of approximately 118 kDa. This protein plays a mechanical role in modulating transcriptional regulation and apoptosis. It interacts with homeodomain transcription factors influencing the activity of various gene promoters. Within cells HIPK2 is expressed widely in several tissues including the heart brain and liver highlighting its diverse functional involvement across different biological systems. |
| **Biological function summary** | The wide-ranging actions of HIPK2 make it essential for cell growth apoptosis and stress response. HIPK2 associates with various transcription factors and other-binding partners forming dynamic complexes that mediate its functions. By phosphorylating target proteins it regulates p53 and promotes p53-mediated apoptosis making it an important part of stress response networks. Additionally HIPK2 is implicated in the regulation of Wnt signaling pathways which are important for cell proliferation and differentiation processes. |
| **Pathways** | HIPK2 plays an integrative role in apoptotic and Wnt signaling pathways. It serves as a facilitator of the DNA damage response primarily through the modulation of p53 activity. It also contributes to the Wnt signaling pathway by phosphorylating beta-catenin and enhancing its degradation therefore regulating cellular proliferation. The interactions of HIPK2 with proteins like p53 and beta-catenin illustrate its significant involvement in controlling cell fate and maintaining cellular homeostasis. |
| **Associated diseases and disorders** | HIPK2 is linked to various cancers and neurodegenerative diseases due to its role in apoptosis and cell cycle regulation. Disruption in HIPK2 activity leads to impaired apoptosis and contributes to tumorigenesis particularly in cancers like breast and colorectal cancer. In neurodegenerative disorders such as Alzheimer's disease abnormal HIPK2 activity is associated with altered cellular signaling. The relationship with key proteins like p53 further explains how deviations in HIPK2 function can lead to disease states making it a valuable target for therapeutic interventions. |

# 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.

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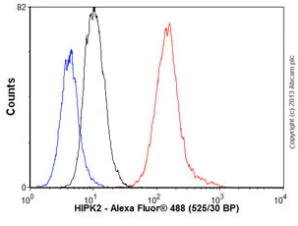
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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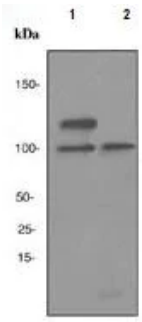
## 3 product images




### Flow Cytometry (Intracellular) - Anti-HIPK2 antibody [EPR3819] - BSA and Azide free (ab221980)

HIPK2 Flow Cytometry (Intracellular) staining using rabbit Anti-HIPK2 antibody

This data was developed using ab108543, the same antibody clone in a different buffer formulation.
Overlay histogram showing HEK293 cells stained with ab108543 (red line). The cells were fixed with 80% methanol (5 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 (ab108543, 1/10000 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit IgG (H&L) (ab150077) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (0.1µg/1x$10^6$ cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. This antibody gave a positive signal in HEK293 cells fixed with 4% paraformaldehyde (10 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.




## Western blot - Anti-HIPK2 antibody [EPR3819] - BSA and Azide free (ab221980)

HIPK2 Western blot staining using rabbit Anti-HIPK2 antibody

This data was developed using ab108543, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-HIPK2 antibody [EPR3819] (ab108543) at 1/2000 dilution

Lane 1:
HT-1080 cell lysate at 10 µg

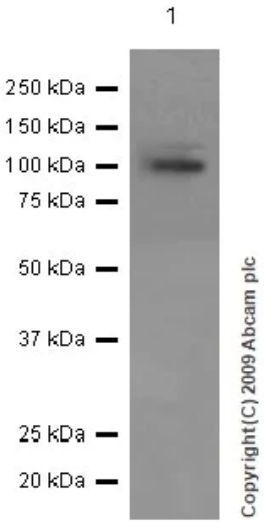
Lane 2:
HepG2 cell lysate at 10 µg

Secondary

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

Predicted band size: 131 kDa

Observed band size: 100 kDa, 130 kDa




## Western blot - Anti-HIPK2 antibody [EPR3819] - BSA and Azide free (ab221980)

HIPK2 Western blot staining of Mouse heart tissue lysate using rabbit Anti-HIPK2 antibody

**Blocking and diluting buffer and concentration:** 5% NFDM/TBST
This data was developed using ab108543, the same antibody clone in a different buffer formulation.

All lanes:
Western blot - Anti-HIPK2 antibody [EPR3819] (ab108543) at 1/2000 dilution

All lanes:
Mouse heart tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/10000 dilution

Predicted band size: 131 kDa

Observed band size: 100 kDa, 130 kDa

Exposure time: 180s

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