abcam

ab270522

Anti-HIF1 beta antibody [EPR23106-151] - BSA and Azide free

Recombinant | RabMAb | KO Validated

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	EPR23106-151
Purification technique	Affinity purification Protein A
Concentration	0.966 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	-

Notes	-

Expected

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

IHC-P

Tested

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

ChIP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

WB

Tested

Species	Mouse, Rat, Human
Dilution info	-

Notes	-

ICC/IF

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Target data

See full target information ARNT

Function

Required for activity of the AHR. Upon ligand binding, AHR translocates into the nucleus, where it heterodimerizes with ARNT and induces transcription by binding to xenobiotic response elements (XRE). Not required for the ligand-binding subunit to translocate from the cytosol to the nucleus after ligand binding (PubMed:34521881). The complex initiates transcription of genes involved in the regulation of a variety of biological processes, including angiogenesis, hematopoiesis, drug and lipid metabolism, cell motility and immune modulation (Probable). The heterodimer binds to core DNA sequence 5'-TACGTG-3' within the hypoxia response element (HRE) of target gene promoters and functions as a transcriptional regulator of the adaptive response to hypoxia (By similarity). The heterodimer ARNT:AHR binds to core DNA sequence 5'-TGCGTG-3' within the dioxin response element (DRE) of target gene promoters and activates their transcription (PubMed:28396409).

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

ab270522 is the carrier-free version of ab270520.

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	HIF1 beta also known as ARNT (Aryl Hydrocarbon Receptor Nuclear Translocator) plays an important role in cellular response to low oxygen levels. It partners with HIF1 alpha to form the hypoxia-inducible factor (HIF) complex. This beta subunit has a molecular weight of approximately 90 kDa and expresses ubiquitously in many cell types across different tissues. As part of the HIF complex HIF1 beta acts as a critical transcriptional regulator during hypoxic conditions.
Biological function summary	HIF1 beta regulates the expression of genes involved in adaptation to hypoxia. It functions as a dimerization partner in the HIF complex joining with HIF1 alpha or other proteins in the PAS superfamily to activate transcription of target genes. These genes are important for processes like angiogenesis metastasis and energy metabolism helping cells adapt to oxygen-deprived environments. The protein's interaction mainly influences cellular responses to hypoxia supporting tissue survival and function under stress.
Pathways	The involvement of HIF1 beta in the cellular hypoxia response is significant. It engages in the HIF pathway interacting closely with HIF1 alpha promoting the transcription of hypoxia-responsive genes when oxygen levels drop. This process integrates with larger pathways like the VEGF signaling pathway vital for blood vessel formation. Moreover its connection to ARNT serves motivation in the regulation of circadian rhythms showing the protein's broad relevance in cellular regulation.

Associated diseases and disorders	HIF1 beta has associations with cancer and ischemic conditions. Aberrant activation of the HIF pathway where HIF1 beta is an important component can drive tumor progression through increased angiogenesis and metabolic reprogramming connecting it indirectly to VEGF. In ischemia altered gene expression mediated by HIF1 beta can influence tissue response to low oxygen contributing to disease pathology. Therefore targeting HIF1 beta might offer potential therapeutic avenues for these conditions.

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

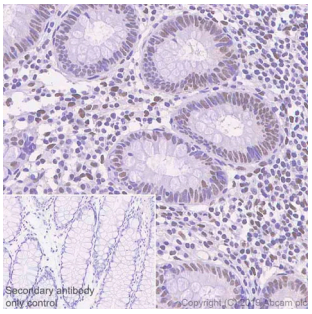
We do not recommend this combination. It is not covered by our product promise.

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.

6 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HIF1 beta antibody [EPR23106-151] - BSA and Azide free (ab270522)

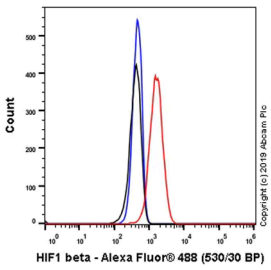
HIF1 beta Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HIF1 beta antibody

Immunohistochemical analysis of paraffin-embedded Human colon tissue labeling HIF1 beta with ab270520 at 1/500 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Nuclear staining on human colon is observed. The section was incubated

with ab270520 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab270520).

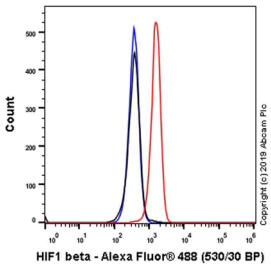


Flow Cytometry (Intracellular) - Anti-HIF1 beta antibody [EPR23106-151] - BSA and Azide free (ab270522)

HIF1 beta Flow Cytometry (Intracellular) staining using rabbit Anti-HIF1 beta antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol permeabilized HeLa (Human cervix adenocarcinoma epithelial cell) cells labelling HIF1 beta with ab270520 at 1/600 dilution (0.1 µg) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).
Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab270520).

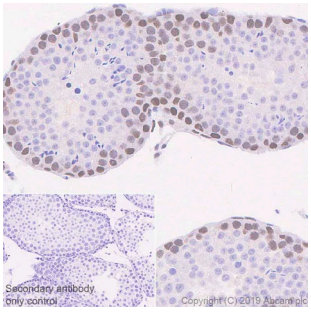


Flow Cytometry (Intracellular) - Anti-HIF1 beta antibody [EPR23106-151] - BSA and Azide free (ab270522)

HIF1 beta Flow Cytometry (Intracellular) staining using rabbit Anti-HIF1 beta antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol permeabilized NIH/3T3 (Mouse embryonic fibroblast) cells labelling HIF1 beta with ab270520 at 1/600 dilution (0.1 µg) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).
A Goat anti rabbit IgG (Alexa Fluor®488, ab150077) at 1/2000 dilution was used as the secondary antibody.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab270520).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HIF1 beta antibody [EPR23106-151] - BSA and Azide free (ab270522)

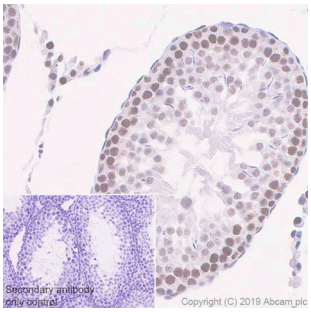
HIF1 beta Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HIF1 beta antibody

Immunohistochemical analysis of paraffin-embedded Mouse testis tissue labeling HIF1 beta with ab270520 at 1/500 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Nuclear staining on mouse testis is observed. The section was incubated

with ab270520 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab270520).



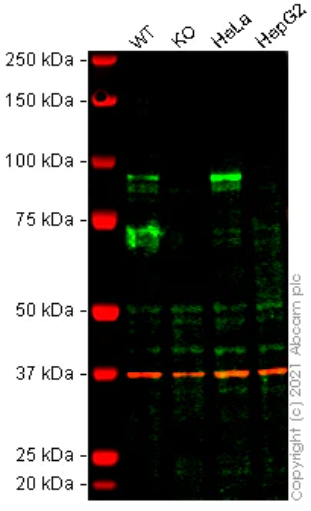
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HIF1 beta antibody [EPR23106-151] - BSA and Azide free (ab270522)

HIF1 beta Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HIF1 beta antibody

Immunohistochemical analysis of paraffin-embedded Rat testis tissue labeling HIF1 beta with ab270520 at 1/500 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Nuclear staining on rat testis is observed. The section was incubated with ab270520 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab270520).



Western blot - Anti-HIF1 beta antibody [EPR23106-151] - BSA and Azide free (ab270522)

This data was developed using the same antibody clone in a different buffer formulation (ab270520).
Lanes 1 - 4: Merged signal (red and green). Green - ab270520 observed at 90 kDa. Red - loading control ab8245 (Mouse anti-GAPDH antibody [6C5]) observed at 37 kDa.

ab270520 was shown to react with HIF1 beta in wild-type HAP1 cells in Western blot with loss of signal observed in ARNT knockout sample.Wild-type HAP1 and ARNT knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 5 % milk in TBS-T (0.1 % Tween®) before incubation with ab270520 and ab8245 (Mouse anti-GAPDH antibody [6C5]) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 h at room temperature before imaging.

All lanes:
Western blot - Anti-HIF1 beta antibody [EPR23106-151] (ab270520) at 1/1000 dilution

Lane 1:
Wild-type HAP1 cell lysate at 20 µg

Lane 2:
ARNT knockout HAP1 cell lysate at 20 µg

Lane 3:
HeLa cell lysate at 20 µg

Lane 4:
HepG2 cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 87 kDa

Observed band size: 90 kDa

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