abcam

ab270520

Anti-HIF1 beta antibody [EPR23106-151]

Anti-HIF1 beta antibody [EPR23106-151] (ab270520) is a rabbit monoclonal antibody detecting HIF1 beta in **Western Blot, Flow Cytometry (Intra), IHC-P**. Suitable for **Human, Mouse, Rat**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency

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	EPR23106-151
Purification technique	Affinity purification Protein A
Concentration	0.588 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse

Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

ChIP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

ICC/IF

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/600
Notes	-

Species	Human
Dilution info	1/600
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
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	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

What is this antibody validated in?
Anti-HIF1 beta antibody [EPR23106-151] (ab270520) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunohistochemistry (IHC-P) in Human, Mouse, Rat samples.

What is the molecular weight of HIF1 beta?
Anti-HIF1 beta [EPR23106-151] (ab270520) specifically detects a band for HIF1 beta (UniProt: P53762) at a molecular weight of 87kDa.

Specificity confirmed
The specificity of Anti-HIF1 beta antibody [EPR23106-151] (ab270520) has been confirmed by Western blot testing in ARNT Knockout HAP1 cells.

Other related products
We have a range of other formats of antibody clone [EPR23106-151] also available for your convenience: 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.

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.

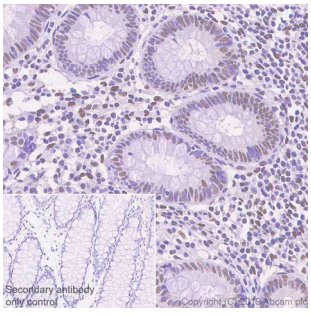
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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7 product images

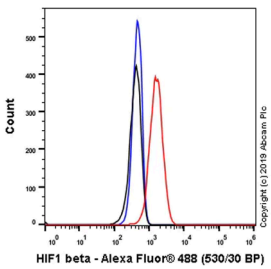


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HIF1 beta antibody [EPR23106-151] (ab270520)

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.

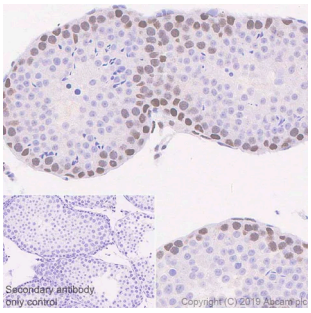
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).



Flow Cytometry (Intracellular) - Anti-HIF1 beta antibody [EPR23106-151] (ab270520)

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.

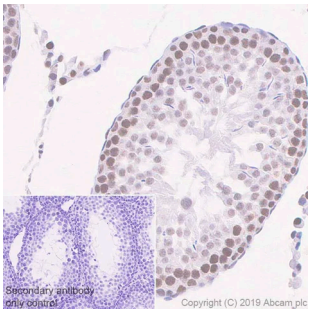


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HIF1 beta antibody [EPR23106-151] (ab270520)

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).

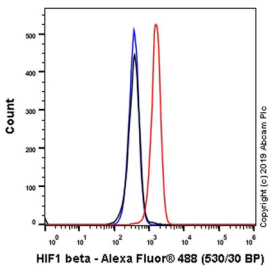


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HIF1 beta antibody [EPR23106-151] (ab270520)

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.

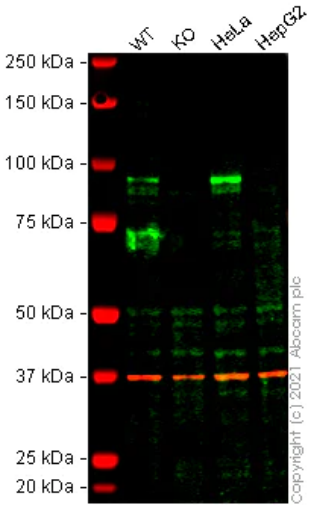
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).



Flow Cytometry (Intracellular) - Anti-HIF1 beta antibody [EPR23106-151] (ab270520)

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.



Western blot - Anti-HIF1 beta antibody [EPR23106-151] (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

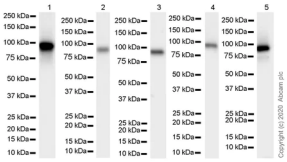
Lane 3:
HeLa cell lysate at 20 µg

Lane 4:
HepG2 cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 87 kDa

Observed band size: 90 kDa



Western blot - Anti-HIF1 beta antibody [EPR23106-151] (ab270520)

Blocking and dilution buffer: 5% NFDM/TBST.
Lysates should be made fresh and used in WB immediately to minimize protein degradation.

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

Lane 1:

MDA-MB-231 (human breast adenocarcinoma epithelial cell), whole cell lysate at 10 µg

Lane 2:
RAW264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage), whole cell lysate at 10 µg

Lane 3:
293T (human embryonic kidney epithelial cell), whole cell lysate at 10 µg

Lane 4:
C6 (rat glial tumor glial cell), whole cell lysate at 10 µg

Lane 5:
HeLa (human cervix adenocarcinoma epithelial cell), whole cell lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 87 kDa

Observed band size: 87 kDa

Exposure time: 26s

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