abcam

ab232601

Anti-PHD finger protein 1/PHF1 antibody [EPR14222] - BSA and Azide free

Recombinant | RabMAb | Advanced Validation

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	EPR14222
Purification technique	Affinity purification Protein A
Specificity	This antibody is specific to PHD finger protein 1, not paired helical filaments.
Concentration	1.077 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human

Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

IHC-P

Tested

Species	Human, Rat
Dilution info	-
Notes	-

Expected

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

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Human
Dilution info	-
Notes	-

ChIC/CUT&RUN-seq

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Target data

See full target information PHF1

Function	Polycomb group (PcG) that specifically binds histone H3 trimethylated at 'Lys-36' (H3K36me3) and recruits the PRC2 complex. Involved in DNA damage response and is recruited at double-strand breaks (DSBs). Acts by binding to H3K36me3, a mark for transcriptional activation, and recruiting the PRC2 complex: it is however unclear whether recruitment of the PRC2 complex to H3K36me3 leads to enhance or inhibit H3K27me3 methylation mediated by the PRC2 complex. According to some reports, PRC2 recruitment by PHF1 promotes H3K27me3 and subsequent gene silencing by inducing spreading of PRC2 and H3K27me3 into H3K36me3 loci (PubMed:18285464, PubMed:23273982). According to another report, PHF1 recruits the PRC2 complex at double-strand breaks (DSBs) and inhibits the activity of PRC2 (PubMed:23142980). Regulates p53/TP53 stability and prolonges its turnover: may act by specifically binding to a methylated from of p53/TP53.

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

ab232601 is the carrier-free version of ab184951.

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 PHD finger protein 1 also known as PHF1 is a protein involved in chromatin remodeling. It weighs approximately 60 kDa. You may find PHF1 expressed in various human tissues including the brain heart and skeletal muscle which suggests its versatile roles across different cell types. This protein contains a plant homeodomain (PHD) finger motif which functions mechanically in binding to specific histone modifications notably those associated with methylated lysine residues.
Biological function summary	PHD finger protein 1 plays a role in regulating gene expression by modifying the chromatin structure. It acts as part of the PRC2 complex which is pivotal for depositing methyl marks on histone H3 at lysine 27 (H3K27me3). This modification results in transcriptional repression of target genes. Additionally PHF1 interacts with other chromatin regulators thereby contributing to the finely-tuned control of genetic programs essential for cellular differentiation and development.
Pathways	PHD finger protein 1 is involved in the Polycomb group (PcG) pathways along with the Wnt signaling pathway. PHF1 cooperates with other proteins like EZH2 which is an important enzymatic component of the PRC2 complex to mediate its repressive function on chromatin. This interaction and pathway association highlight its involvement in maintaining stem cell pluripotency and lineage specification during development.
Associated diseases and disorders	PHD finger protein 1 associates with cancers notably endometrial cancer and sarcomas. Alterations in PHF1 expression or function influence the disease progression partly through its interaction with EZH2 leading to abnormal silencing of tumor suppressor genes. Investigations of PHF1 reveal its potential as a biomarker and therapeutic target connecting its modulation to disease outcomes and treatment strategies.

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

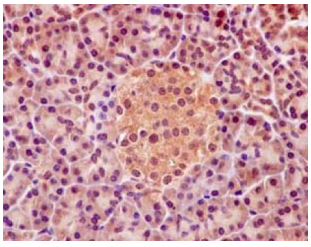
We do not recommend this combination. It is not covered by our product promise.

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.

7 product images

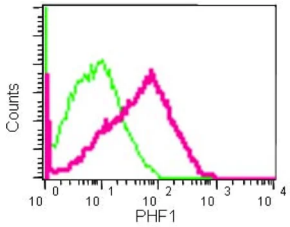


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PHD finger protein 1/PHF1 antibody [EPR14222] - BSA and Azide free (ab232601)

PHD finger protein 1/PHF1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PHD finger protein 1/PHF1 antibody

Immunohistochemical analysis of paraffin-embedded human pancreas tissue labeling PHF1 with ab184951 at 1/100 dilution followed by pre-diluted HRP-conjugated secondary antibody and counter-stained with Hematoxylin.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab184951).

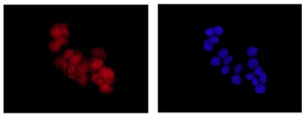
Perform heat mediated antigen retrieval with EDTA buffer pH 9 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-PHD finger protein 1/PHF1 antibody [EPR14222] - BSA and Azide free (ab232601)

PHD finger protein 1/PHF1 Flow Cytometry (Intracellular) staining using rabbit Anti-PHD finger protein 1/PHF1 antibody

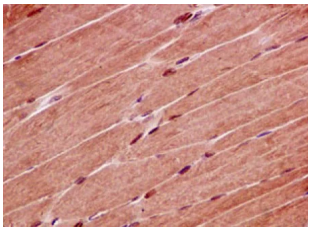
Intracellular flow cytometric analysis of 293 cells (2% paraformaldehyde-fixed) labeling PHF1 with ab184951 at 1/160 dilution (red) mpared to a negative control antibody (red) or a rabbit IgG (negative) (green), followed by Goat anti rabbit IgG (FITC) secondary at 1/150 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab184951).



Immunocytochemistry/ Immunofluorescence - Anti-PHD finger protein 1/PHF1 antibody [EPR14222] - BSA and Azide free (ab232601)

PHD finger protein 1/PHF1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PHD finger protein 1/PHF1 antibody

Immunofluorescent analysis of MCF7 cells (4% paraformaldehyde-fixed) labeling PHF1 with ab184951 at 1/500 dilution followed by Goat anti rabbit IgG (AlexaFluor® 555) secondary at 1/200 dilution and counter-stained with DAPI (blue).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab184951).

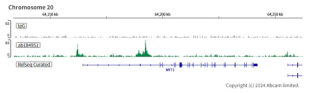


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PHD finger protein 1/PHF1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PHD finger protein 1/PHF1 antibody

Immunohistochemical analysis of paraffin-embedded Rat skeletal muscle tissue labeling PHF1 with ab184951 at 1/100 dilution followed by pre-diluted HRP-conjugated secondary antibody and counter-stained with Hematoxylin.
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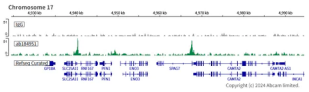


ChIC/CUT&RUN sequencing - Anti-PHD finger protein 1/PHF1 antibody [EPR14222] - BSA and Azide free (ab232601)

This data was developed using the same antibody clone in a different buffer formulation (ab184951).

ChIC/CUT&RUN was performed using a pAG-MNase at a final concentration of 700 ng/mL, 2.5 x 10^5 NCCIT (human pluripotent embryonic carcinoma epithelial cell) cells and 5 µg of ab184951 [EPR14222]. The resulting DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 10 million reads. The negative IgG control ab172730 is also shown.

The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods.

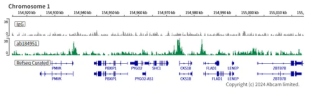


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Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.