abcam

ab133577

Anti-HP1 alpha antibody [EPR5776]

Recombinant | RabMAb | Advanced Validation | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.05% Sodium azide Constituents: 50% Tissue culture supernatant, 40% Glycerol (glycerin, glycerine), 9.85% Tris glycine
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR5776
Purity	Tissue culture supernatant
Specificity	The immunogen used for this product shares 83% homology with CBX1/HP1 beta. Cross-reactivity with this protein has not been confirmed experimentally.

Reactivity data

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000 - 1/10000
Notes	-

Species	Rat
Dilution info	1/1000 - 1/10000
Notes	-

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/10 - 1/100

Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

ChIC/CUT&RUN-seq

Tested

Species	Human
Dilution info	5 µg
Notes	-

Expected

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

Target data

See full target information CBX5

Function	Component of heterochromatin that recognizes and binds histone H3 tails methylated at 'Lys-9' (H3K9me), leading to epigenetic repression (PubMed:40440427). In contrast, it is excluded from chromatin when 'Tyr-41' of histone H3 is phosphorylated (H3Y41ph) (PubMed:19783980). Also recognizes and binds histone H1.4 methylated at 'Lys-26' (H1.4K26me) (PubMed:16127177). Excluded from chromatin when histone H1.4 is Simultaneously methylated at Lys-26 (H1.4K26me) and phosphorylated at Ser-27 (H1.4S27Ph) (PubMed:16127177). May contribute to the association of heterochromatin with the inner nuclear membrane by interactions with the lamin-B receptor (LBR) (PubMed:19783980). Involved in the formation of kinetochore through interaction with the MIS12 complex subunit NSL1 (PubMed:19783980, PubMed:20231385). Required for the formation of the inner centromere (PubMed:20231385).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Stable for 12 months at -20°C

Notes

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	HP1 alpha also known as HP1a or HP1 protein is a well-studied member of the heterochromatin protein 1 family. It plays a mechanical role in chromatin organization and gene regulation by binding to histone H3 when it's methylated at lysine 9 (H3K9me). This protein has a molecular mass of approximately 22-25 kDa. HP1 alpha is commonly expressed in the nuclei of eukaryotic cells where it localizes to heterochromatin regions and influences chromatin compaction.
Biological function summary	Heterochromatin protein 1 alpha acts as a modulator of gene silencing. It is part of a larger protein complex that contains various chromatin modifiers responsible for maintaining the silent state of certain genes. By mediating these interactions HP1 alpha helps regulate transcription replication timing and DNA repair processes. This regulation is essential for the structural maintenance of heterochromatin and plays a part in chromosomal stability.
Pathways	HP1 alpha is integral in the epigenetic regulation pathway along with other well-known proteins including SUV39H1 and SUV39H2 which are histone methyltransferases. HP1 alpha also links to the DNA damage response pathway

	where it recruits repair factors to maintain genomic integrity. Through these pathways HP1 alpha interacts closely with proteins like BRCA1 emphasizing its role in cellular homeostasis and response to DNA damage.
Associated diseases and disorders	Researchers associate HP1 alpha with cancer and developmental disorders. Alterations in HP1 alpha expression or function can lead to disruptions in chromatin organization contributing to oncogenesis by affecting tumor suppressor genes. Furthermore HP1 alpha links to disorders like ICF syndrome through its relationship with the DNA methylation process where it interacts with proteins such as DNMT3B. Understanding these connections provides insights into therapeutic approaches targeting epigenetic modifications 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

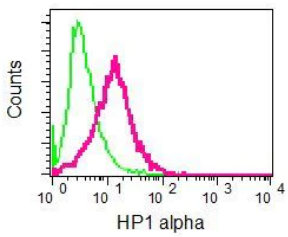
We do not recommend this combination. It is not covered by our product promise.

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.

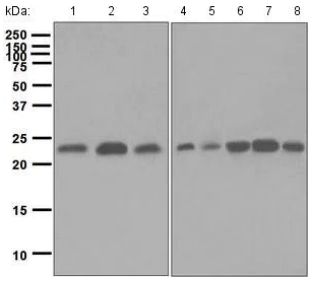
5 product images



Flow Cytometry (Intracellular) - Anti-HP1 alpha antibody [EPR5776] (ab133577)

HP1 alpha Flow Cytometry (Intracellular) staining using rabbit Anti-HP1 alpha antibody

Intracellular Intracellular Flow Cytometrric analysis of HPA1 alpha in permeabilized SH SY5Y cells, using ab133577 at a 1/10 dilution (red) or a control rabbit IgG antibody (green).



Western blot - Anti-HP1 alpha antibody [EPR5776] (ab133577)

All lanes:
Western blot - Anti-HP1 alpha antibody [EPR5776] (ab133577) at 1/1000 dilution

Lane 1:
HeLa cell lysate at 10 µg

Lane 2:
SH SY5Y cell lysate at 10 µg

Lane 3:
MCF7 cell lysate at 10 µg

Lane 4:
A431 cell lysate at 10 µg

Lane 5:
C6 cell lysate at 10 µg

Lane 6:
RAW 264.7 cell lysate at 10 µg

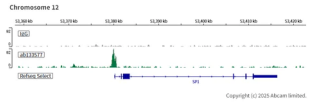
Lane 7:
PC12 cell lysate at 10 µg

Lane 8:
NIH 3T3 cell lysate at 10 µg

Secondary

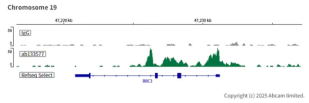
All lanes:
HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 22 kDa



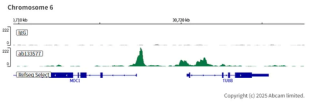
ChIC/CUT&RUN sequencing - Anti-HP1 alpha antibody [EPR5776] (ab133577)

ChIC/CUT&RUN was performed using a pAG-MNase at a final concentration of 700 ng/mL 2.5 x 10^5 K-562 (human chronic myelogenous leukemia lymphoblast) cells and 5 µg of ab ab133577[EPR5776]. 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'.