abcam

ab77256

Anti-HP1 alpha antibody

Key facts

Isotype	IgG
Host species	Goat
Storage buffer	pH: 7.3 Preservative: 0.02% Sodium azide Constituents: 0.5% BSA, 0.5% Tris buffered saline
Form	Liquid
Clonality	Polyclonal
Immunogen	Synthetic Peptide within Human CBX5 aa 50-150. The exact immunogen used to generate this antibody is proprietary information. Database link P45973
Purification technique	Affinity purification Immunogen
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	ab77256 is purified from goat serum by ammonium sulphate precipitation followed by antigen affinity chromatography using the immunising peptide.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	10 µg/mL
Notes	-

Predicted

Species	Rat, Cow, Dog, Rhesus monkey, Chinese hamster
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	0.03-0.1 µg/mL
Notes	Primary incubation 1 hour at room temperature reccomended for this product.

Predicted

Species	Rat, Cow, Dog, Rhesus monkey, Chinese hamster
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	10 µg/mL
Notes	-

Predicted

Species	Rat, Cow, Dog, Rhesus monkey, Chinese hamster
Dilution info	-
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	Blue Ice
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

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

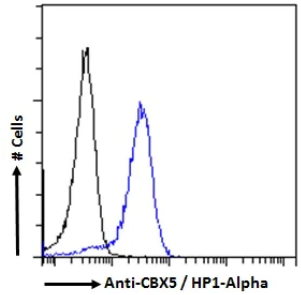
We do not recommend this combination. It is not covered by our product promise.

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.

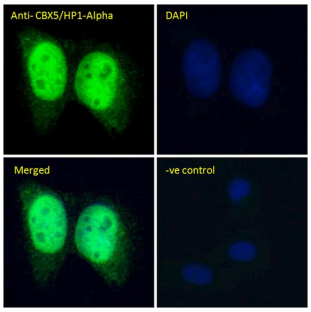
3 product images



Flow Cytometry - Anti-HP1 alpha antibody (ab77256)

HP1 alpha Flow Cytometry staining using goat Anti-HP1 alpha antibody

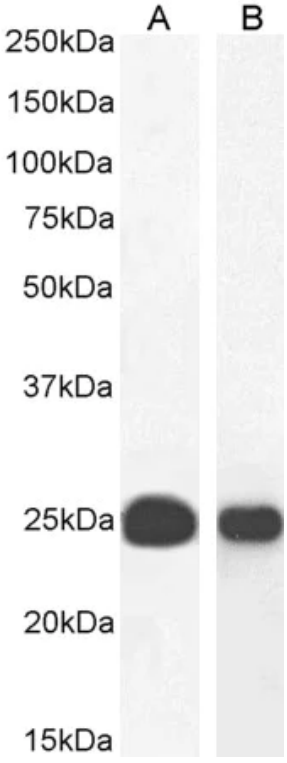
Flow cytometric analysis HeLa cells labeling HP1 alpha with ab77256 at 10 ug/mL (blue line). Cells were fixed with paraformaldehyde fixed and permeabilized with 0.5% Triton. Alexa Fluor 488 at 2ug/mL was used as the secondary antibody. IgG control: Unimmunized goat IgG (black line) followed by Alexa Fluor 488 secondary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-HP1 alpha antibody (ab77256)

HP1 alpha Immunocytochemistry/ Immunofluorescence staining using goat Anti-HP1 alpha antibody

Immunofluorescence analysis of paraformaldehyde fixed, 0.15% Triton permeabilized U-2 OS (Human bone osteosarcoma epithelial cell line) cells labeling HP1 alpha with ab77256 at 10ug/ml for 1hr, followed by Alexa Fluor 488 secondary antibody (4ug/ml), showing nuclear staining. The nuclear stain is DAPI (blue).
Negative control: Unimmunized goat IgG (10ug/ml) followed by Alexa Fluor 488 secondary antibody (4ug/ml).



Western blot - Anti-HP1 alpha antibody (ab77256)

All lanes:
Western blot - Anti-HP1 alpha antibody (ab77256) at 0.03 µg/mL

Lane 1:
A43N cell lysate at 35 µg

Lane 2:
K562 cell lysate at 35 µg

Predicted band size: 22 kDa

Observed band size: 25 kDa

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