abcam

ab198391

Alexa Fluor® 647 Anti-HP1 alpha antibody [EPR5777] - Heterochromatin marker

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 647
Excitation/Emission	Ex: 650nm, Em: 665nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR5777
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	-

Expected

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

Flow Cyt (Intra)

Expected

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

IHC-P

Expected

Species	Human, 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	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, Store in the dark

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.

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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

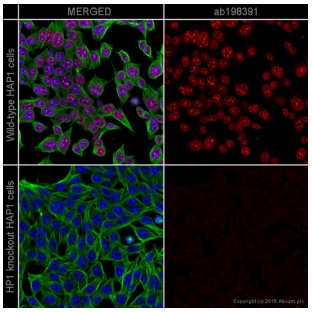
We do not recommend this combination. It is not covered by our product promise.

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.

2 product images

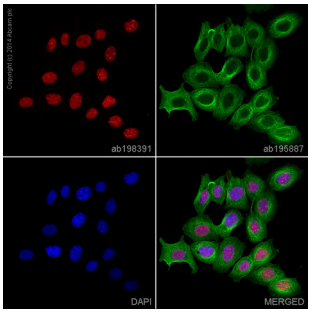


Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 647 Anti-HP1 alpha antibody [EPR5777] - Heterochromatin marker (ab198391)

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

ab198391 staining HP1α in wild-type HAP1 cells (top panel) and HP1α in wild-type HAP1 cells (bottom panel). The cells were fixed with 100% methanol (5min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab198391 at 1/500 dilution (shown in red) and ab7291 at 1µg/ml concentration overnight at +4°C, followed by a further incubation at room temperature for 1h with a goat secondary antibody to Mouse IgG (Alexa Fluor® 488) (ab150117) at 2 µg/ml (shown in green). Nuclear DNA was labelled in blue with DAPI.
This product also gave a positive signal under the same testing conditions in HAP1 cells fixed with 4% formaldehyde (10 min).

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8)



Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 647 Anti-HP1 alpha antibody [EPR5777] - Heterochromatin marker (ab198391)

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

ab198391 staining HP1 in MCF-7 cells. The cells were fixed with 4% formaldehyde (10 min), permeabilised in 0.1% Triton X-100 for 5 minutes and then blocked in 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab198391 at 1/100 dilution (shown in red) and ab195887, Mouse monoclonal [DM1A] to alpha Tubulin (Alexa Fluor® 488, shown in green) at 1/167 dilution overnight at +4°C. Nuclear DNA was labelled in blue with DAPI.
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

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