abcam

# ab154195

# Anti-HP1 gamma/CBX3 antibody [EPR10466(B)]

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** | EPR10466(B) |
| **Purification technique** | Affinity purification Protein A |
| **Concentration** | 0.223 - 0.446 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

### IP

**Not recommended**

| | |
|---|---|
| **Species** | Mouse, Human |
| **Dilution info** | - |
| **Notes** | - |

### WB

### Tested

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

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

## IHC-P

### Not recommended

| | |
|---|---|
| **Species** | Mouse, Human |
| **Dilution info** | - |
| **Notes** | - |

## ICC/IF

### Not recommended

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

## Target data

See full target information CBX3

| | |
|---|---|
| **Function** | Component of heterochromatin, which recognizes and binds histone H3 tails methylated at 'Lys-9', leading to epigenetic repression (PubMed:11242053). 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). Involved in the formation of functional kinetochore through interaction with MIS12 complex proteins (PubMed:15502821). Contributes to the conversion of local chromatin to a heterochromatin-like repressive state through H3 'Lys-9' trimethylation, mediates the recruitment of the methyltransferases SUV39H1 and/or SUV39H2 by the PER complex to the E-box elements of the circadian target genes such as PER2 itself or PER1 (By similarity). Mediates the recruitment of NIPBL to sites of DNA damage at double-strand breaks (DSBs) (PubMed:28167679). |

## Storage

| | |
|---|---|
| **Shipped at conditions** | Conditional Ambient |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | -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.

**Species reactivity**
Rat: We have preliminary internal testing data to indicate this antibody may not react with this species.
Please contact us for more information.

## Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

| | |
|---|---|
| **Activity summary** | The HP1 gamma protein also known as CBX3 is an essential component of the chromatin organization machinery. It has a molecular weight of approximately 22-25 kDa. HP1 gamma is expressed in a variety of tissues including brain liver and muscle indicating its broad functional involvement across different biological systems. It exhibits a high affinity for binding to histone H3 when it is methylated facilitating the formation of heterochromatin which is key to regulating gene expression and maintaining genome stability. |
| **Biological function summary** | HP1 gamma plays a significant role in gene silencing and chromatin structure maintenance. It forms part of a protein complex that includes chromatin remodeling enzymes and transcriptional repressors which help regulate access to genomic DNA. HP1 gamma's association with other chromatin-associated proteins helps modulate the transcriptional response to cellular stimuli ensuring appropriate gene expression patterns needed for normal cell function and development. |
| **Pathways** | HP1 gamma is involved in heterochromatin formation and maintenance pathways working alongside other proteins like SUV39H1 and HP1 alpha. Through these pathways HP1 gamma ensures the compact organization of repetitive DNA sequences and suppresses unnecessary transcription. It is also involved in the DNA damage response pathway playing a role in preserving genomic integrity by interacting with proteins such as BRCA1 and 53BP1 involved in DNA repair. |
| **Associated diseases and disorders** | HP1 gamma's dysregulation has been associated with cancer and neurological disorders. Overexpression or mutations in this protein can lead to aberrant gene silencing contributing to oncogenesis where cancer-related genes become improperly regulated. Additionally alterations in HP1 gamma function are linked to neurodegenerative diseases potentially through its interaction with proteins like MECP2 whereby changes in the chromatin environment influence neuronal gene expression and function. Therefore understanding HP1 gamma's role provides insights into potential therapeutic targets 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.

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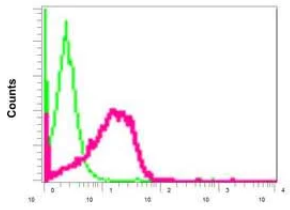
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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## 3 product images

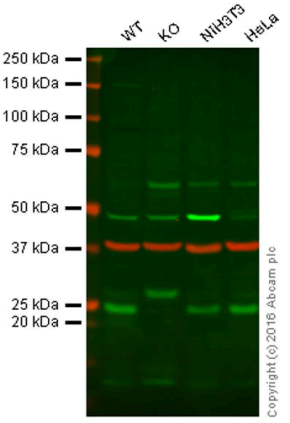



### Flow Cytometry (Intracellular) - Anti-HP1 gamma/CBX3 antibody [EPR10466(B)] (ab154195)

HP1 gamma/CBX3 Flow Cytometry (Intracellular) staining using rabbit Anti-HP1 gamma/CBX3 antibody

Intracellular flow cytometric analysis of permeabilized HeLa cells labeling HP1 gamma/CBX3 with ab154195 at 1/10 dilution (red) compared with a rabbit IgG negative control antibody (green).

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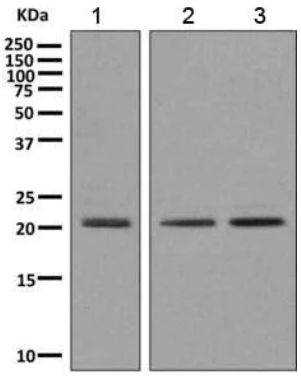



### Western blot - Anti-HP1 gamma/CBX3 antibody [EPR10466(B)] (ab154195)

HP1 gamma/CBX3 Western blot staining using rabbit Anti-HP1 gamma/CBX3 antibody

**Lane 1:** Wild-type HAP1 cell lysate (20 µg)
**Lane 2:** HP1 gamma/CBX3 knockout HAP1 cell lysate (20 µg)
**Lane 3:** NIH3T3 cell lysate (20 µg)
**Lane 4:** HeLa cell lysate (20 µg)
**Lanes 1 - 4:** Merged signal (red and green). Green - ab154195 observed at 24 kDa. Red - loading control, ab8245, observed at 37 kDa.
ab154195 was shown to recognize HP1 gamma/CBX3 when HP1 gamma/CBX3 knockout samples were used, along with additional cross-reactive bands. Wild-type and HP1 gamma/CBX3 knockout samples were subjected to SDS-PAGE. ab154195 and ab8245 (loading control to GAPDH) were diluted at 1/1000 and 1/10000 respectively and incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed ab216776 secondary antibodies at 1/10000 dilution for 1 h at room temperature before imaging.
All lanes:
Western blot - Anti-HP1 gamma/CBX3 antibody [EPR10466(B)] (ab154195)

Predicted band size: 20 kDa




## Western blot - Anti-HP1 gamma/CBX3 antibody [EPR10466(B)] (ab154195)

All lanes:
Western blot - Anti-HP1 gamma/CBX3 antibody [EPR10466(B)] (ab154195) at 1/1000 dilution

Lane 1:
HepG2 cell lysate at 10 µg

Lane 2:
MOLT4 cell lysate at 10 µg

Lane 3:
HeLa cell lysate at 10 µg

Secondary

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

Predicted band size: 20 kDa

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