abcam

ab240388

# Anti-UHRF1 antibody [EPR18803-11] - BSA and Azide free

Recombinant | RabMAb

## 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** | EPR18803-11 |
| **Purification technique** | Affinity purification Protein A |
| **Specificity** | UHRF1 is aboundant in tissues like thymus, bone marrow. For other tissues with low expression level, please upload higher amount of tissue lysate or use lower antibody dilution. |
| **Concentration** | 1.077 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

### IP

**Tested**

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

### Not recommended

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

## WB

### Expected

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

### Not recommended

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

## ICC/IF

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | Recommended for human only. |

### Not recommended

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | - |

| | |
|---|---|
| **Notes** | - |

## Flow Cyt (Intra)

### Tested

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

### Not recommended

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

## IHC-P

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | Recommended for human only. |

### Not recommended

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

# Target data

See full target information UHRF1

| | |
|---|---|
| **Function** | E3 ubiquitin-protein ligase that acts as a key epigenetic regulator by bridging DNA methylation and chromatin modification (PubMed:10646863, PubMed:15009091, PubMed:19056828, PubMed:23022729, PubMed:24013172, PubMed:27595565, PubMed:30104358, PubMed:30392929, PubMed:30392931, PubMed:39607687). |

Plays a key role in DNA methylation inheritance by promoting recruitment of DNMT1 to hemimethylated DNA and ensure faithful propagation of the DNA methylation patterns through DNA replication (PubMed:23022729, PubMed:24013172, PubMed:27595565, PubMed:30104358, PubMed:30392929, PubMed:30392931, PubMed:39607687). Acts both as a histone reader and writer: specifically recognizes and binds (1) hemimethylated DNA at replication forks and (2) histone H3 trimethylated at 'Lys-9' and unmethylated at 'Arg-2' (H3K9me3 and H3R2me0, respectively), thereby activating its E3 ubiquitin-protein ligase activity (PubMed:15361834, PubMed:17673620, PubMed:17967883, PubMed:18772889, PubMed:21745816, PubMed:21777816, PubMed:22100450, PubMed:22837395, PubMed:23022729, PubMed:27595565, PubMed:30104358). UHRF1 then mediates histone H3 'Lys-18' monoubiquitination (H3K18ub), a docking site for DNMT1, leading to DNMT1 recruitment and replication-coupled DNA methylation maintenance (PubMed:27595565). Also mediates histone H3 'Lys-14' and 'Lys-23' ubiquitination (H3K14ub and H3K23ub) at lower level (PubMed:24013172, PubMed:27595565). Histone ubiquitin ligase activity also stimulates the methyltransferase activity of SUV39H1 and/or SUV39H2, promoting accumulation of H3K9me3 histone mark to reinformce heterochromatin state (PubMed:39631394). Enriched in pericentric heterochromatin where it recruits different chromatin modifiers required for this chromatin replication. Also localizes to euchromatic regions where it negatively regulates transcription possibly by impacting DNA methylation and histone modifications (PubMed:21777816). Plays a role in DNA repair by cooperating with UHRF2 to ensure recruitment of FANCD2 to interstrand cross-links (ICLs) leading to FANCD2 activation (PubMed:30335751). Also ubiquitinates non-histone proteins, such as histone H3, KIF11 and PML (PubMed:22945642, PubMed:37728657). Acts as a critical player of proper spindle architecture by catalyzing the 'Lys-63'-linked ubiquitination of KIF11, thereby controlling KIF11 localization on the spindle (PubMed:37728657).

## 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

ab240388 is the carrier-free version of ab213223.

**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** | UHRF1 also known as ICBP90 or Np95 is a nuclear protein playing key roles in epigenetic regulation. It weighs approximately 90 kDa. UHRF1 is expressed in various tissues most highly in proliferating cells. Functionally UHRF1 recognizes hemimethylated DNA and recruits DNA methyltransferase 1 (DNMT1) to maintain DNA methylation after replication. This ability to interact with both DNA and chromatin makes UHRF1 central to chromatin modification processes. |
| **Biological function summary** | UHRF1 engages in preserving the DNA methylation landscape ensuring proper gene expression patterns. It is part of a multi-protein complex and processes both histone modification and DNA methylation. Its presence is critical for gene silencing through the recruitment of DNMT1 and histone deacetylases. UHRF1 therefore influences regulatory regions of genes important for cell cycle progression and development. |
| **Pathways** | UHRF1 integrates into methylation-dependent gene silencing and cell cycle regulation. It actively participates in DNA damage repair pathways by modulating the p53 pathway aiding cell survival post-DNA damage. UHRF1 closely interacts with epigenetic regulators such as DNMT1 and histone deacetylases bridging methylation and chromatin remodeling to ensure proper cell cycle and transcriptional control. |
| **Associated diseases and disorders** | UHRF1's dysregulation links to cancers including breast and lung cancer due to its role in maintaining aberrant methylation. Abnormal UHRF1 expression leads to improper silencing of tumor suppressor genes. UHRF1's interaction with DNMT1 and modulation of pathways involving p53 are important for cancer cell proliferation making it a potential target for cancer therapies. |

# 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.

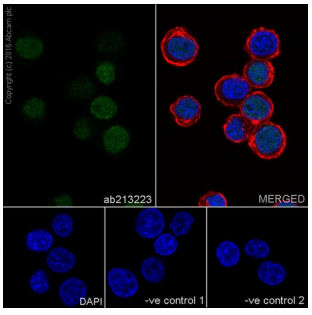
In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

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## 8 product images

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### Immunocytochemistry/ Immunofluorescence - Anti-UHRF1 antibody [EPR18803-11] - BSA and Azide free (ab240388)

UHRF1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-UHRF1 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized Jurkat (Human T cell leukemia cell line from peripheral blood) cells labeling UHRF1 with ab213223 at 1/500 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor®488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing nuclear staining on HeLa cell line.

The nuclear counterstain is DAPI (blue).

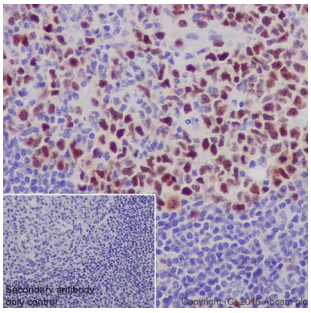
Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution and ab150120 (Goat anti-Mouse IgG (Alexa Fluor® 594)) at 1/1000 dilution (red).

The negative controls are as follows:-

-ve control 1: ab213223 at 1/500 dilution followed by ab150120 at 1/1000 dilution.

-ve control 2: ab7291 at 1/1000 dilution followed by ab150077 at 1/1000 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab213223).



## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-UHRF1 antibody [EPR18803-11] - BSA and Azide free (ab240388)

UHRF1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-UHRF1 antibody

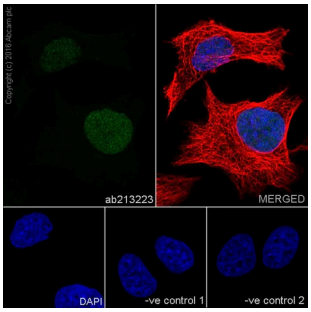
Immunohistochemical analysis of paraffin-embedded Human tonsil tissue labeling UHRF1 with ab213223 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.
Nucleus staining on Human tonsil germinal center is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab97051 at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab213223).

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




## Immunocytochemistry/ Immunofluorescence - Anti-UHRF1 antibody [EPR18803-11] - BSA and Azide free (ab240388)

UHRF1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-UHRF1 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling UHRF1 with ab213223 at 1/500 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor®488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing nuclear staining on HeLa cell line.

The nuclear counterstain is DAPI (blue).

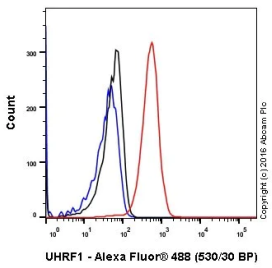
Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution and ab150120 (Goat anti-Mouse IgG (Alexa Fluor® 594)) at 1/1000 dilution (red).

The negative controls are as follows:-

-ve control 1: ab213223 at 1/500 dilution followed by ab150120 at 1/1000 dilution.

-ve control 2: ab7291 at 1/1000 dilution followed by ab150077 at 1/1000 dilution.

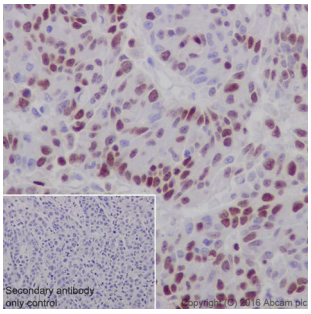
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab213223).




## Flow Cytometry (Intracellular) - Anti-UHRF1 antibody [EPR18803-11] - BSA and Azide free (ab240388)

UHRF1 Flow Cytometry (Intracellular) staining using rabbit Anti-UHRF1 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed Jurkat (Human T cell leukemia cell line from peripheral blood) cells labeling UHRF1 with ab213223 at 1/70 dilution (red) compared with a Rabbit IgG,monoclonal [EPR25A] - Isotype control (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti Rabbit IgG (Alexa Fluor® 488) at 1/2000 dilution was used as the secondary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab213223).




## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-UHRF1 antibody [EPR18803-11] - BSA and Azide free (ab240388)

UHRF1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-UHRF1 antibody

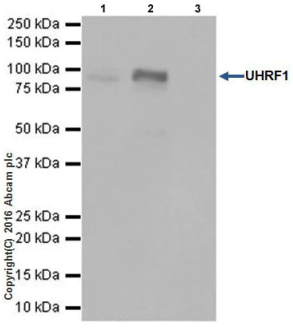
Immunohistochemical analysis of paraffin-embedded Human colon cancer tissue labeling UHRF1 with ab213223 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.
Nucleus staining on Human colon cancer is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab97051 at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab213223).

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




## Immunoprecipitation - Anti-UHRF1 antibody [EPR18803-11] - BSA and Azide free (ab240388)

UHRF1 was immunoprecipitated from 0.35 mg of HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate with ab213223 at 1/30 dilution.
Western blot was performed from the immunoprecipitate using ab213223 at 1/1000 dilution.

VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10000 dilution.

Lane 1: HeLa whole cell lysate, 10µg (Input).

Lane 2: ab213223 IP in HeLa whole cell lysate.

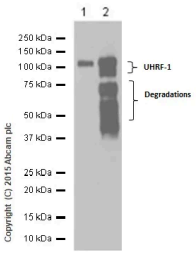
Lane 3: Rabbit IgG,monoclonal [EPR25A]-Isotype Control (ab172730) instead of ab213223 in HeLa whole cell lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 1 second.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab213223).
All lanes:
Immunoprecipitation - Anti-UHRF1 antibody [EPR18803-11] (ab213223)

Predicted band size: 89 kDa




## Western blot - Anti-UHRF1 antibody [EPR18803-11] - BSA and Azide free (ab240388)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab213223). Blocking and diluting buffer and concentration: 5% NFDM/TBST. UHRF1 has two isoforms. UHRF1 undergo degradation under normal conditions as well as in response to DNA damage. (PMID: 23297342, PMID: 36593255)
All lanes:
Western blot - Anti-UHRF1 antibody [EPR18803-11] (ab213223) at 1/1000 dilution

Lane 1:
Human colon tissue lysate at 20 µg

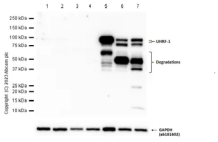
Lane 2:
Human thymus tissue lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/20000 dilution

Predicted band size: 89 kDa

Exposure time: 20s



## Western blot - Anti-UHRF1 antibody [EPR18803-11] - BSA and Azide free (ab240388)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab213223). Blocking and diluting buffer and concentration: 5% NFDM/TBST. ab181602 was used as GAPDH loading control. UHRF1 has two isoforms. UHRF1 undergo degradation under normal conditions as well as in response to DNA damage. (PMID: 23297342, PMID: 36593255)
All lanes:
Western blot - Anti-UHRF1 antibody [EPR18803-11] (ab213223) at 1/1000 dilution

Lane 1:
Human brain tissue lysate at 20 µg

Lane 2:
Human kidney tissue lysate at 20 µg

Lane 3:
Human spleen tissue lysate at 20 µg

Lane 4:
Human colon tissue lysate at 20 µg

Lane 5:

HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 6:
HepG2 (Human hepatocellular carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 7:
U-937 (Human histiocytic lymphoma monocyte) whole cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/20000 dilution

Predicted band size: 89 kDa

Exposure time: 20s

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