abcam

ab109371

Anti-HUS1 antibody [EPR5132]

Recombinant | RabMAb

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	EPR5132
Purification technique	Affinity purification Protein A
Concentration	0.774 - 0.839 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	-

ICC/IF

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Target data

See full target information HUS1

Function

Component of the 9-1-1 cell-cycle checkpoint response complex that plays a major role in DNA repair (PubMed:21659603). The 9-1-1 complex is recruited to DNA lesion upon damage by the RAD17-replication factor C (RFC) clamp loader complex (PubMed:21659603). Acts then as a sliding clamp platform on DNA for several proteins involved in long-patch base excision repair (LP-BER) (PubMed:21659603). The 9-1-1 complex stimulates DNA polymerase beta (POLB) activity by increasing its affinity for the 3'-OH end of the primer-template and stabilizes POLB to those sites where LP-BER proceeds; endonuclease FEN1 cleavage activity on substrates with double, nick, or gap flaps of distinct sequences and lengths; and DNA ligase I (LIG1) on long-patch base excision repair substrates (PubMed:21659603). The 9-1-1 complex is necessary for the recruitment of RHNO1 to sites of double-stranded breaks (DSB) occurring during the S phase (PubMed:21659603).

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

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

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	HUS1 also known as checkpoint protein HUS1 homolog is a protein that plays an important role in DNA damage response. It has a molecular mass of about 34 kDa and is expressed in various tissues with notable expression in testis and thymus. HUS1 is part of the Rad9-Rad1-Hus1 (9-1-1) complex which acts as a sensor for DNA damage and activates downstream signaling pathways for DNA repair mechanisms.
Biological function summary	HUS1 is important in maintaining genomic stability and integrity. It forms a complex with RAD9 and RAD1 creating the 9-1-1 complex that localizes to sites of DNA damage. This complex enables the recruitment and activation of several key DNA repair proteins facilitating the repair process. HUS1 plays a role in the activation of cell cycle checkpoints essential for preventing the propagation of damaged DNA during cell division.

Pathways	HUS1 is significantly involved in the DNA damage response and cell cycle regulation pathways. The protein connects into the ATR signaling pathway where it helps activate ATR kinase in response to DNA damage. Related proteins in these pathways include ATM and CHK1 which also serve in coordinating the cellular response to DNA injuries.
Associated diseases and disorders	HUS1 is associated with cancer pathogenesis particularly in regard to its role in DNA repair. Mutations or dysregulation in HUS1 can lead to genomic instability a hallmark of cancerous cells. In addition to cancer HUS1 plays a role in hereditary diseases such as Ataxia-telangiectasia due to its connection with the ATM protein which is mutated in this disorder. Understanding HUS1's function and interactions might provide insight into therapeutic approaches 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

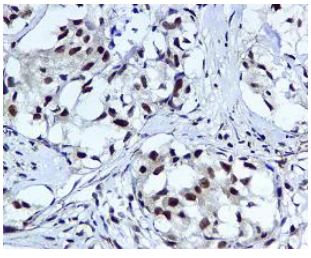
We do not recommend this combination. It is not covered by our product promise.

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.

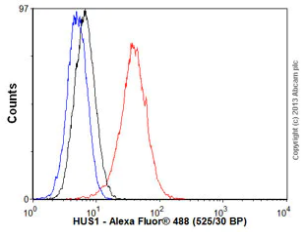
3 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HUS1 antibody [EPR5132] (ab109371)

HUS1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HUS1 antibody

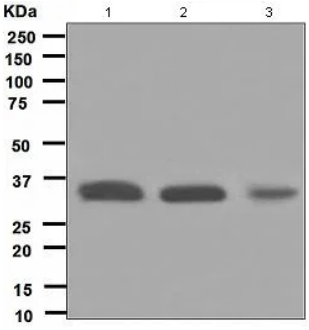
Immunohistochemical analysis of paraffin-embedded Human breast carcinoma tissue using ab109371 at a dilution of 1/100.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-HUS1 antibody [EPR5132] (ab109371)

HUS1 Flow Cytometry (Intracellular) staining using rabbit Anti-HUS1 antibody

Overlay histogram showing HeLa cells stained with ab109371 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab109371 1/1000 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit IgG (H+L) (ab150077) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (0.1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. This antibody gave a positive signal in HeLa cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.



Western blot - Anti-HUS1 antibody [EPR5132] (ab109371)

All lanes:
Western blot - Anti-HUS1 antibody [EPR5132] (ab109371) at 1/1000 dilution

Lane 1:
HeLa cell lysate at 10 µg

Lane 2:
K562 cell lysate at 10 µg

Lane 3:
A431 cell lysate at 10 µg

Predicted band size: 32 kDa

Observed band size: 34 kDa

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