abcam

## Product datasheet

# Anti-CD46 antibody [EPR4014] - Low endotoxin, Azide free ab229446

KO VALIDATED Recombinant RabMAb

9 Images

### Overview

| | |
|---|---|
| **Product name** | Anti-CD46 antibody [EPR4014] - Low endotoxin, Azide free |
| **Description** | Rabbit monoclonal [EPR4014] to CD46 - Low endotoxin, Azide free |
| **Host species** | Rabbit |
| **Tested applications** | **Suitable for:** IHC-P, WB<br>**Unsuitable for:** Flow Cyt or IP |
| **Species reactivity** | **Reacts with:** Human<br>**Predicted to work with:** Rabbit |
| **Immunogen** | Synthetic peptide corresponding to residues in Human CD46. |
| **Positive control** | WB: Wild-type HAP1 cell lysate. MOLT-4, Jurkat, HeLa and K562 cell lysates. IHC-P: Human thyroid gland carcinoma, colonic adenocarcinoma, breast carcinoma, kidney, breast, uterus, placenta and tonsil tissue. |
| **General notes** | ab229446 is a carrier-free antibody designed for use in antibody labeling, including fluorochromes, metal isotopes, oligonucleotides, enzymes.<br><br>Our Low endotoxin, azide-free formats have low endotoxin level (≤ 1 EU/ml, determined by the LAL assay) and are free from azide, to achieve consistent experimental results in functional assays.<br><br>Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.<br><br>Reproducibility is key to advancing scientific discovery and accelerating scientists' next breakthrough.<br><br>Abcam is leading the way with our range of recombinant antibodies, knockout-validated antibodies and knockout cell lines, all of which support improved reproducibility.<br><br>We are also planning to innovate the way in which we present recommended applications and species on our product datasheets, so that only applications & species that have been tested in our own labs, our suppliers or by selected trusted collaborators are covered by our Abpromise™ guarantee.<br><br>In preparation for this, we have started to update the applications & species that this product is |

Abpromise guaranteed for.

We are also updating the applications & species that this product has been “predicted to work with,” however this information is not covered by our Abpromise guarantee.

Applications & species from publications and Abreviews that have not been tested in our own labs or in those of our suppliers are not covered by the Abpromise guarantee.

Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, as well as customer reviews and Q&As.

## Properties

| | |
|---|---|
| **Form** | Liquid |
| **Storage instructions** | Shipped at 4°C. Store at +4°C. Do Not Freeze. |
| **Storage buffer** | pH: 7.20<br>Constituent: PBS |
| **Carrier free** | Yes |
| **Purity** | Protein A purified |
| **Clonality** | Monoclonal |
| **Clone number** | EPR4014 |
| **Isotype** | IgG |

## Applications

Our Abpromise guarantee covers the use of **ab229446** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

| Application | Abreviews | Notes |
|---|---|---|
| IHC-P | | Use at an assay dependent concentration. Perform heat mediated antigen retrieval via the pressure cooker method before commencing with IHC staining protocol. |
| WB | | Use at an assay dependent concentration. Predicted molecular weight: 44 kDa. |

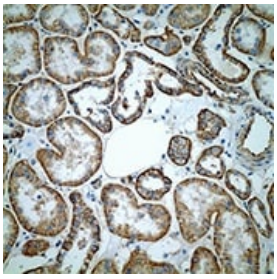
**Application notes** Is unsuitable for Flow Cyt or IP.

## Target

**Function** Acts as a cofactor for complement factor I, a serine protease which protects autologous cells against complement-mediated injury by cleaving C3b and C4b deposited on host tissue. May be involved in the fusion of the spermatozoa with the oocyte during fertilization. Also acts as a costimulatory factor for T-cells which induces the differentiation of CD4+ into T-regulatory 1 cells. T-regulatory 1 cells suppress immune responses by secreting interleukin-10, and therefore are thought to prevent autoimmunity. A number of viral and bacterial pathogens seem to exploit this property and directly induce an immunosuppressive phenotype in T-cells by binding to CD46.

| | |
|---|---|
| **Tissue specificity** | Expressed by all cells except erythrocytes. |
| **Involvement in disease** | Defects in CD46 are a cause of susceptibility to hemolytic uremic syndrome atypical type 2 (AHUS2) [MIM:612922]. An atypical form of hemolytic uremic syndrome. It is a complex genetic disease characterized by microangiopathic hemolytic anemia, thrombocytopenia, renal failure and absence of episodes of enterocolitis and diarrhea. In contrast to typical hemolytic uremic syndrome, atypical forms have a poorer prognosis, with higher death rates and frequent progression to end-stage renal disease. Note=Susceptibility to the development of atypical hemolytic uremic syndrome can be conferred by mutations in various components of or regulatory factors in the complement cascade system. Other genes may play a role in modifying the phenotype. Patients with CD46 mutations seem to have an overall better prognosis compared to patients carrying CFH mutations. |
| **Sequence similarities** | Contains 4 Sushi (CCP/SCR) domains. |
| **Domain** | Sushi domains 1 and 2 are required for interaction with human adenovirus B PIV/FIBER protein and with Measles virus H protein. Sushi domains 2 and 3 are required for Herpesvirus 6 binding. Sushi domain 3 is required for Neisseria binding. Sushi domains 3 and 4 are required for interaction with Streptococcus pyogenes M protein and are the most important for interaction with C3b and C4b. |
| **Post-translational modifications** | N-glycosylated on Asn-83; Asn-114 and Asn-273 in most tissues, but probably less N-glycosylated in testis. N-glycosylation on Asn-114 and Asn-273 is required for cytoprotective function. N-glycosylation on Asn-114 is required for Measles virus binding. N-glycosylation on Asn-273 is required for Neisseria binding. N-glycosylation is not required for human adenovirus binding.<br>Extensively O-glycosylated in the Ser/Thr-rich domain. O-glycosylation is required for Neisseria binding but not for Measles virus or human adenovirus binding.<br>In epithelial cells, isoforms B/D/F/H/J/L/3 are phosphorylated by YES1 in response to infection by Neisseria gonorrhoeae; which promotes infectivity. In T-cells, these isoforms may be phosphorylated by Lck. |
| **Cellular localization** | Cytoplasmic vesicle > secretory vesicle > acrosome inner membrane. Inner acrosomal membrane of spermatozoa. Internalized upon binding of Measles virus, Herpesvirus 6 or Neisseria gonorrhoeae, which results in an increased susceptibility of infected cells to complement-mediated injury. In cancer cells or cells infected by Neisseria, shedding leads to a soluble peptide. |

## Images

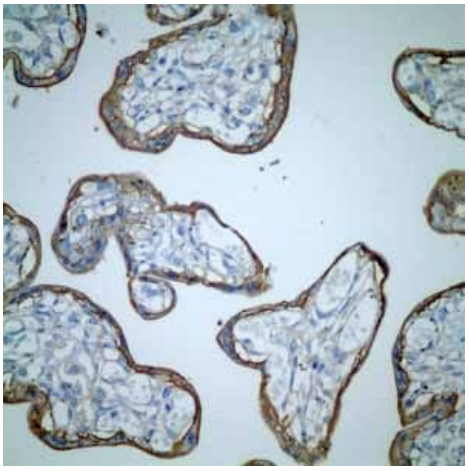


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD46 antibody [EPR4014] - Low endotoxin, Azide free (ab229446)

ab108307, at 1/500 dilution, staining CD46 in paraffin-embedded human kidney tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108307).

Perform heat mediated antigen retrieval via the pressure cooker method before commencing with IHC staining protocol.

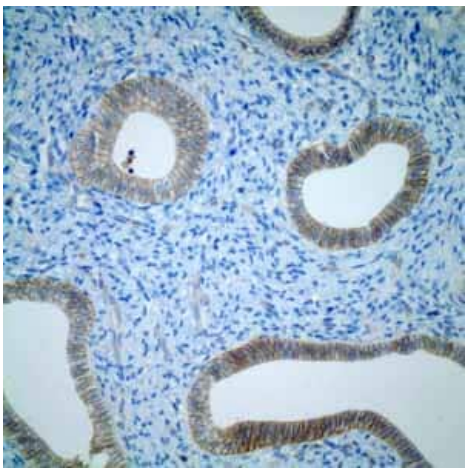


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD46 antibody [EPR4014] - Low endotoxin, Azide free (ab229446)

ab108307 showing positive staining in human normal placenta tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108307).

Perform heat mediated antigen retrieval via the pressure cooker method before commencing with IHC staining protocol.

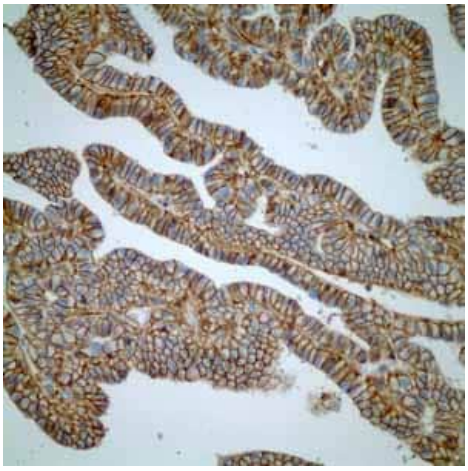


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD46 antibody [EPR4014] - Low endotoxin, Azide free (ab229446)

ab108307 showing positive staining in human normal uterus tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108307).

Perform heat mediated antigen retrieval via the pressure cooker method before commencing with IHC staining protocol.

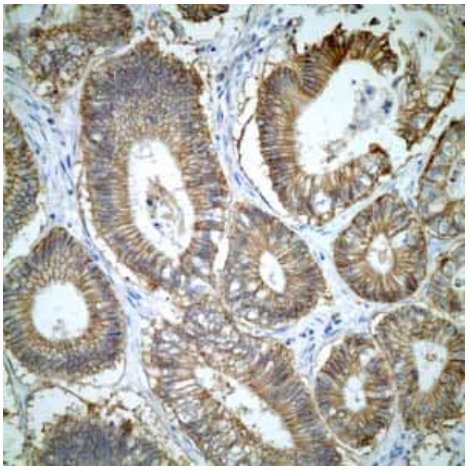


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD46 antibody [EPR4014] - Low endotoxin, Azide free (ab229446)

ab108307 showing positive staining in human thyroid gland carcinoma tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108307).

Perform heat mediated antigen retrieval via the pressure cooker method before commencing with IHC staining protocol.

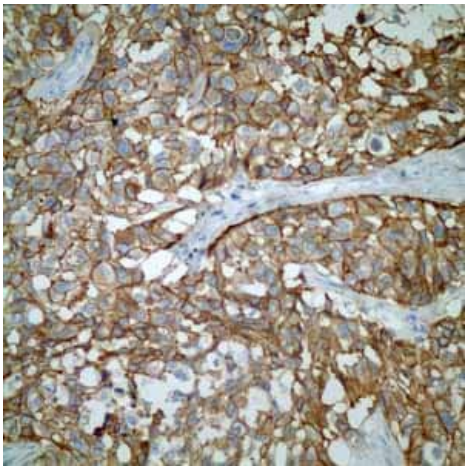


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD46 antibody [EPR4014] - Low endotoxin, Azide free (ab229446)

ab108307 showing positive staining in human colonic adenocarcinoma tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108307).

Perform heat mediated antigen retrieval via the pressure cooker method before commencing with IHC staining protocol.

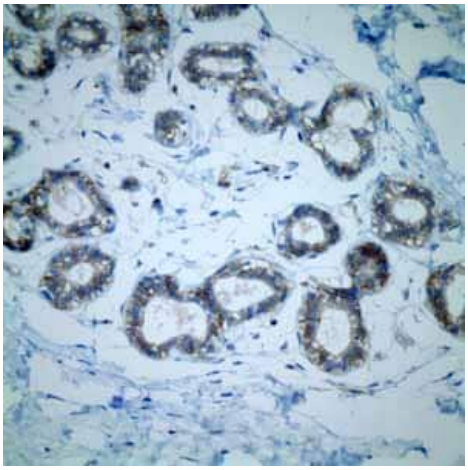


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD46 antibody [EPR4014] - Low endotoxin, Azide free (ab229446)

ab108307 showing positive staining in human breast carcinoma tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108307).

Perform heat mediated antigen retrieval via the pressure cooker method before commencing with IHC staining protocol.

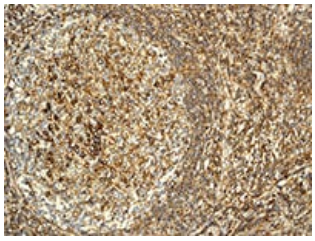


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD46 antibody [EPR4014] - Low endotoxin, Azide free (ab229446)

ab108307 showing positive staining in human normal breast tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108307).

Perform heat mediated antigen retrieval via the pressure cooker method before commencing with IHC staining protocol.

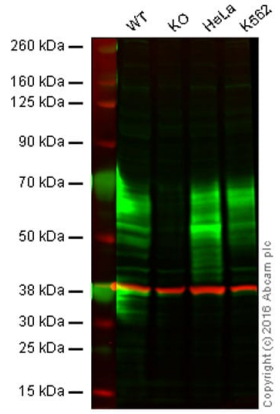


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD46 antibody [EPR4014] - Low endotoxin, Azide free (ab229446)

This IHC data was generated using the same anti-CD46 antibody clone, EPR4014, in a different buffer formulation (cat# ab108307).

ab108307, at 1/500 dilution, staining CD46 in paraffin-embedded human tonsil tissue.

Perform heat mediated antigen retrieval via the pressure cooker method before commencing with IHC staining protocol.




Western blot - Anti-CD46 antibody [EPR4014] - Low endotoxin, Azide free (ab229446)

This WB data was generated using the same anti-CD46 antibody clone, EPR4014, in a different buffer formulation (cat# ab108307).

**Lane 1**: Wild-type HAP1 cell lysate (20 µg)
**Lane 2**: CD46 knockout HAP1 cell lysate (20 µg)
**Lane 3**: HeLa cell lysate (20 µg)
**Lane 4**: K562 cell lysate (20 µg)
**Lanes 1 - 4**: Merged signal (red and green). Green - ab108307 observed at 50-70 kDa. Red - loading control, ab8245, observed at 37 kDa.
ab108307 was shown to specifically react with when CD46 knockout samples were used. Wild-type and CD46 knockout samples were subjected to SDS-PAGE. ab108307 and ab8245 (loading control to GAPDH) were diluted 1/1000 and 1/10 000 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 1/10 000 dilution for 1 h at room temperature before imaging.



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