abcam

ab222515

Anti-CDA antibody [EPR20525]

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	EPR20525
Purification technique	Affinity purification Protein A
Concentration	0.543 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/70
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/2000
Notes	-

Target data

See full target information CDA

Function	This enzyme scavenges exogenous and endogenous cytidine and 2'-deoxycytidine for UMP synthesis.

Storage

Shipped at conditions	Conditional Ambient
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

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.

Supplementary info

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

Activity summary	Cytidine deaminase (CDA) also known as CDD is a zinc-dependent enzyme responsible for deaminating cytidine. The full form of CDA has a molecular mass of approximately 41 kDa. CDA is widely expressed in various tissues including liver kidney and leukocytes. It plays an important role in nucleotide metabolism by converting cytidine to uridine and 2'-deoxycytidine to 2'-deoxyuridine which impacts nucleic acid stability and synthesis. Researchers frequently use techniques such as ELISA and Western blotting to study CDA expression and activity often referencing it in contexts like "CDA Western" or "57 seconds CDA."
Biological function summary	CDA enzyme influences the pyrimidine salvage pathway by facilitating nucleotide degradation and recycling. It operates independently rather than as part of a protein complex. The activity of this enzyme ensures a balanced nucleotide pool essential for DNA replication and repair processes. This balance affects cellular proliferation and survival highlighting the importance of studying CDA protein in normal physiology and various pathological conditions.
Pathways	CDA contributes significantly to pyrimidine metabolism and its recycling pathway. It maintains a connection with ribonucleotide reductase which plays a role in the regulation of deoxyribonucleotide pools during DNA synthesis. This interplay highlights the enzyme’s involvement in DNA repair pathways ensuring proper cell division and genomic integrity. Within these pathways enzymes like cytidine triphosphate synthetase also relate to CDA by participating in nucleotide homeostasis.
Associated diseases and disorders	Improper CDA function is linked to specific cancers including acute myeloid leukemia due to altered nucleotide metabolism leading to genomic instability. The enzyme's activity also affects the pharmacokinetics of cytidine analogues like gemcitabine used in cancer treatment. CDA overexpression might result in reduced drug efficacy thereby hindering therapy in affected patients. Connections exist between CDA and proteins involved in chemoresistance such as ribonucleotide reductase showing its significance in treatment outcomes.

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.

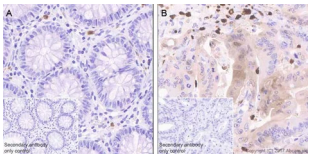
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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7 product images

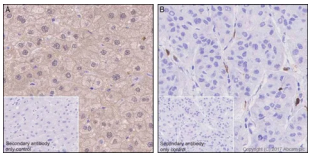


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CDA antibody [EPR20525] (ab222515)

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

Immunohistochemical analysis of paraffin-embedded human normal colon (panel A) and colon cancer (panel B) tissues labeling CDA with ab222515 at 1/2000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Cytoplasmic and nuclear staining on sporadic stromal cells of human normal colon tissue, while adjacent cancer cells and some stromal cells show moderate positive staining. The IHC signal on human colon cancer tissue was higher than its corresponding normal tissue (PMID: 9849491). Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

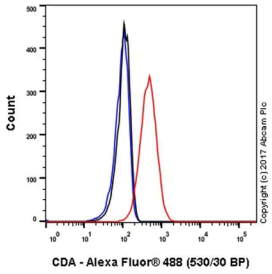


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CDA antibody [EPR20525] (ab222515)

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

Immunohistochemical analysis of paraffin-embedded human normal liver (panel A) and liver cancer (panel B) tissues labeling CDA with ab222515 at 1/2000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Cytoplasmic and nuclear staining on normal human liver tissues, with only sporadic stromal cells showing positive staining in human liver cancer. The IHC signal on human liver cancer tissue was much lower than its corresponding normal tissue (PMID: 9849491). Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

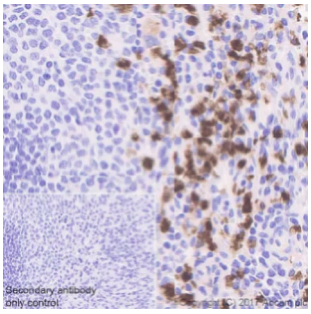
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-CDA antibody [EPR20525] (ab222515)

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

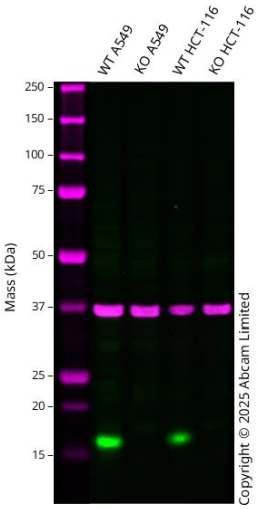
Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized HeLa (humanepithelialcell line from cervix adenocarcinoma) cell line labeling CDA with ab222515 at 1/70 dilution (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/2000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CDA antibody [EPR20525] (ab222515)

Immunohistochemical analysis of paraffin-embedded human spleen tissue labeling CDA with ab222515 at 1/2000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Nuclear and cytoplasmic staining on neutrophils of human spleen (PMID: 11069255). Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-CDA antibody [EPR20525] (ab222515)

CDA Western blot staining using rabbit Anti-CDA antibody

Western blot: Rabbit Monoclonal [EPR20525] to CDA ab222515 staining at 1/1000 dilution, shown in green; Mouse anti GAPDH (ab8245) loading control staining at 1/20,000 dilution, shown in magenta.
A band was observed at 16 kDa in Wild-type A549 cell lysates with no signal observed at this size in CDA knockout A549 cell line.

To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3pc Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged.

Secondary antibodies used were Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20,000 dilution.

All lanes:
Western blot - Anti-CDA antibody [EPR20525] (ab222515) at 1/1000 dilution

Lane 1:
Wild-type A549 at 20 µg

Lane 2:
CDA knockout A549 at 20 µg

Lane 2:
Western blot - Human CDA knockout A549 cell line (ab300883) at 20 µg

Lane 3:
Wild-type HCT at 20 µg

Lane 4:
CDA knockout HCT at 20 µg

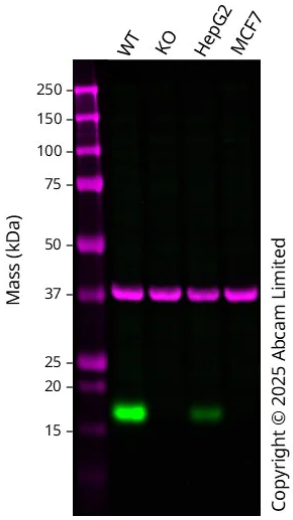
Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 16 kDa

Observed band size: 16 kDa



Western blot - Anti-CDA antibody [EPR20525] (ab222515)

CDA Western blot staining using rabbit Anti-CDA antibody

Western blot: Rabbit Monoclonal [EPR20525] to CDA ab222515 staining at 1/1000 dilution, shown in green; Mouse anti GAPDH (ab8245) loading control staining at 1/20,000 dilution, shown in magenta.
A band was observed at 17 kDa in Wild-type HCT 116 cell lysates with no signal observed at this size in cda knockout HCT 116 cell line.

To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3pc Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged.

Secondary antibodies used were Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20,000 dilution.

All lanes:
Western blot - Anti-CDA antibody [EPR20525] (ab222515) at 1/1000 dilution

Lane 1:
Wild-type HCT 116 at 20 µg

Lane 2:
CDA knockout HCT 116 at 20 µg

Lane 2:
Western blot - Human CDA knockout HCT116 cell line (ab300882) at 20 µg

Lane 3:
HepG2 at 20 µg

Lane 4:
MCF7 at 20 µg

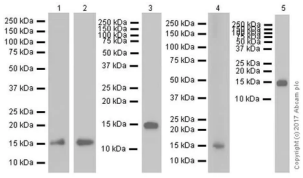
Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 16 kDa

Observed band size: 17 kDa



Western blot - Anti-CDA antibody [EPR20525] (ab222515)

CDA Western blot staining using rabbit Anti-CDA antibody

Exposure times: Lane 1: 3 minutes; Lane 2: 8 seconds; Lanes 3/5: 5 seconds; Lane 4: 30 seconds. Blocking/Dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-CDA antibody [EPR20525] (ab222515) at 1/1000 dilution

Lane 1:
HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 10 µg

Lane 2:
Human fetal spleen lysate at 10 µg

Lane 3:
HepG2 (human liver hepatocellular carcinoma cell line) whole cell lysate at 10 µg

Lane 4:
TF-1 (human bone marrow erythroleukemia cell line) whole cell lysate at 10 µg

Lane 5:
Human fetal kidney lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Developed using the ECL technique.

Predicted band size: 16 kDa

Observed band size: 16 kDa

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