abcam

ab252813

Anti-AICDA antibody [5G9]

Recombinant | KO Validated

Key facts

Isotype	IgG2b
Host species	Rat
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	5G9
Purification technique	Affinity purification Protein A
Concentration	0.947 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1.264 µg/mL
Notes	-

Species	Mouse

Dilution info	1.264 µg/mL
Notes	-

Not recommended

Species	Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	0.316 µg/mL
Notes	-

Expected

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

Not recommended

Species	Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information AICDA

Function	Single-stranded DNA-specific cytidine deaminase. Involved in somatic hypermutation (SHM), gene conversion, and class-switch recombination (CSR) in B-lymphocytes by deaminating C to U during transcription of Ig-variable (V) and Ig-switch (S) region DNA. Required for several crucial steps of B-cell terminal differentiation necessary for efficient antibody responses (PubMed:18722174, PubMed:21385873, PubMed:21518874, PubMed:27716525). May also play a role in the epigenetic regulation of gene expression by participating in DNA demethylation (PubMed:21496894).

Storage

Shipped at conditions	Blue Ice
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

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.

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

Supplementary info

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

Activity summary	AICDA also known as activation-induced cytidine deaminase is an enzyme with a molecular mass of approximately 25 kDa. It is expressed in germinal center B cells within the lymphoid tissues particularly in the spleen and lymph nodes. AICDA catalyzes the deamination of cytidine to uridine in single-stranded DNA an essential step in the processes of somatic hypermutation and class switch recombination. These mechanisms are important for antibody diversity and specificity in the adaptive immune response.
Biological function summary	AICDA plays an important role in the adaptive immune system by facilitating the diversification of antibodies. It does not appear to function as part of a larger protein complex but operates independently to induce mutations in variable regions of immunoglobulin genes. This activity enables B cells to produce antibodies with higher affinity and different isotypes important for an effective immune defense system. AICDA’s function ensures the generation of diverse antibody repertoires allowing the immune system to effectively target a wide range of pathogens.
Pathways	AICDA is integral to the immunoglobulin gene diversification pathway. It initiates somatic hypermutation and class switch recombination by deaminating cytosine residues in the DNA of immunoglobulin genes. This action relates AICDA to other proteins involved in DNA repair and error-prone replication such as uracil-DNA glycosylase (UNG) and the mismatch repair proteins like MSH2 and MSH6. AICDA's deamination activity triggers the recruitment of these proteins to introduce mutations and remove uracil residues facilitating the generation of antibody diversity.
Associated diseases and disorders	Aberrant AICDA activity associates with lymphomas and autoimmune conditions. For example dysregulation of AICDA could contribute to oncogenic mutations leading to non-Hodgkin's lymphoma. Additionally incorrect or unscheduled activation of AICDA might result in the production of autoantibodies implicated in autoimmune disorders like systemic lupus erythematosus (SLE). AICDA’s interaction with DNA repair proteins during misguided activation may lead to genomic instability linking it to both tumorigenesis and autoimmunity.

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.

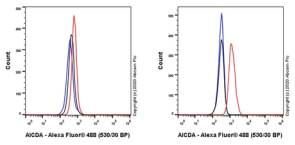
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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:
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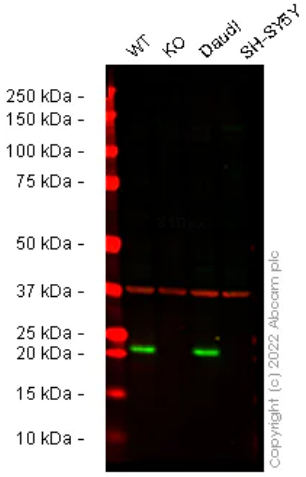
3 product images



Flow Cytometry (Intracellular) - Anti-AICDA antibody [5G9] (ab252813)

AICDA Flow Cytometry (Intracellular) staining using rat Anti-AICDA antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized K-562 (human chronic myelogenous leukemia lymphoblast, Left) / Ramos (human Burkitt's lymphoma B lymphocyte, Right) cells labelling AICDA with ab252813 at0.316µg/mL (Red) compared with a rat monoclonal IgG (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rat IgG (Alexa Fluor® 488, ab150157) at 1/2000 dilution was used as the secondary antibody. **Negative control:** K-562.



Western blot - Anti-AICDA antibody [5G9] (ab252813)

False colour image of Western blot: Anti-AICDA antibody [5G9] staining at 1.264 ug/ml, shown in green; Rabbit Anti-GAPDH antibody [EPR16891] (ab181602) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab252813 was shown to bind specifically to AICDA. A band was observed at 22 kDa in wild-type Raji cell lysates with no signal observed at this size in AICDA knockout cell line ab277185 (knockout cell lysate ab277227). To generate this image, wild-type and AICDA knockout Raji cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % 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-Rat IgG H&L (IRDye® 800CW) preabsorbed (ab253031) and Goat anti-Rabbit IgG H&L 680RD at 1/20000 dilution.
All lanes:
Western blot - Anti-AICDA antibody [5G9] (ab252813) at 1.264 µg/mL

Lane 1:
Wild-type Raji cell lysate at 20 µg

Lane 2:
AICDA knockout Raji cell lysate at 20 µg

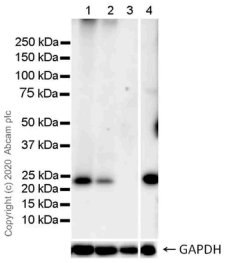
Lane 3:
Daudi cell lysate at 20 µg

Lane 4:
SH-SY5Y cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 23 kDa

Observed band size: 22 kDa



Western blot - Anti-AICDA antibody [5G9] (ab252813)

AICDA Western blot staining using rat Anti-AICDA antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST. **Negative control:** K562 (PMID: 27217538). Exposure time: 59 seconds.
All lanes:
Western blot - Anti-AICDA antibody [5G9] (ab252813) at 1.264 µg/mL

Lane 1:
NAMALWA (human Burkitts lymphoma B lymphocyte), whole cell lysate at 10 µg

Lane 2:
Raji (human Burkitts lymphoma B lymphocyte), whole cell lysate at 10 µg

Lane 3:
K562 (human chronic myelogenous leukemia lymphoblast), whole cell lysate at 10 µg

Lane 4:
WEHI-231 (mouse B cell lymphoma B lymphocyte), whole cell lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rat IgG H&L (HRP) (ab205720) at 1/2000 dilution

Predicted band size: 23 kDa

Observed band size: 23 kDa

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