

AID (H-3): sc-518170

BACKGROUND

Activation-induced Cytidine Deaminase (AID, HIGM-2) is a 198-amino acid, RNA-editing enzyme that contains a conserved cytidine deaminase motif and plays an important role in B-cell terminal differentiation. AID is expressed in germinal center B cells and contributes to the production of neutralizing antibodies IgG, IgA, and IgE. Hyper-IgM syndrome (HIGM2) patients that have deficient levels of AID show the absence of immunoglobulin class switch recombination (CSR), lack of immunoglobulin somatic hypermutations, and lymph node hyperplasia mediated by the presence of giant germinal centers. Furthermore, AID^{-/-} mice are defective in CSR and also show a hyper-IgM phenotype, characterized by enlarged germinal centers containing active B cells. AID thus appears to be required in several stages of B-cell terminal differentiation that are necessary for efficient antibody responses such as B cell proliferation, immunoglobulin somatic hypermutations and CSR.

REFERENCES

1. Muramatsu, M., et al. 1999. Specific expression of activation-induced cytidine deaminase (AID), a novel member of the RNA-editing deaminase family in germinal center B cells. *J. Biol. Chem.* 274: 18470-18476.
2. Muramatsu, M., et al. 2000. Class switch recombination and hypermutation require activation-induced cytidine deaminase (AID), a potential RNA editing enzyme. *Cell* 102: 553-563.
3. Revy, P., et al. 2000. Activation-induced cytidine deaminase (AID) deficiency causes the autosomal recessive form of the Hyper-IgM syndrome (HIGM2). *Cell* 102: 565-575.
4. Muto, T., et al. 2000. Isolation, tissue distribution, and chromosomal localization of the human activation-induced cytidine deaminase (AID) gene. *Genomics* 68: 85-88.
5. Minegishi, Y., et al. 2000. Mutations in activation-induced cytidine deaminase in patients with hyper IgM syndrome. *Clin. Immunol.* 97: 203-210.

CHROMOSOMAL LOCATION

Genetic locus: AICDA (human) mapping to 12p13.31.

SOURCE

AID (H-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 116-134 of AID of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

AID (H-3) is available conjugated to agarose (sc-518170 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-518170 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518170 PE), fluorescein (sc-518170 FITC), Alexa Fluor® 488 (sc-518170 AF488), Alexa Fluor® 546 (sc-518170 AF546), Alexa Fluor® 594 (sc-518170 AF594) or Alexa Fluor® 647 (sc-518170 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-518170 AF680) or Alexa Fluor® 790 (sc-518170 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

AID (H-3) is recommended for detection of AID of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for AID siRNA (h): sc-42729, AID shRNA Plasmid (h): sc-42729-SH and AID shRNA (h) Lentiviral Particles: sc-42729-V.

Molecular Weight of AID: 24 kDa.

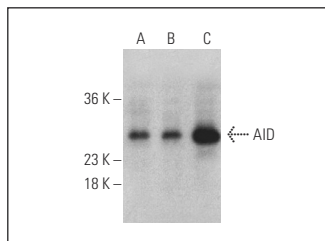
Positive Controls: AID (h): 293T Lysate: sc-127953, U-698-M whole cell lysate: sc-364799 or Raji whole cell lysate: sc-364236.

RECOMMENDED SECONDARY REAGENTS

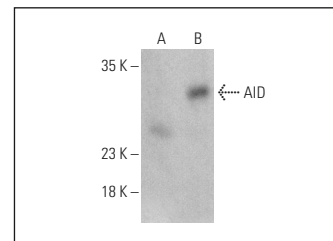
To ensure optimal results, the following support reagents are recommended:

- 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.
- 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).
- 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



AID (H-3): sc-518170. Western blot analysis of AID expression in Raji (A), Daudi (B) and U-698-M (C) whole cell lysates. Detection reagent used: m-IgG_{2b} BP-HRP: sc-542741.



AID (H-3): sc-518170. Western blot analysis of AID expression in non-transfected: sc-117752 (A) and human AID transfected: sc-127953 (B) 293T whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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