SANTA CRUZ BIOTECHNOLOGY, INC.

IgA (B-12): sc-166334

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Immunoglobulins are four-chain, Y-shaped, monomeric structures comprised of two identical heavy chains and two identical light chains held together through interchain disulfide bonds. The chains form two domains, the Fab (antigen binding) fragment and the Fc (constant) fragment. Immunoglobulin A (IgA) is the main protein of the mucosal immune system. It is generated by B cells in gut-associated lymphoid tissues. Daily production of IgA exceeds that of any of the other immunoglobulins. The IgA heavy chain is an α-chain, and the light chains are either κ- or λ- chains. IgA exists mainly in dimers but can also exist as polymers or as monomers. Dimers and polymers contain a joining (J) chain that can be bound by the polymeric immunoglobulin receptor (pIgR) for transportation of the molecule to mucosal surfaces.

REFERENCES

1. Abraham, G.N., et al. 1978. Human triclonal anti-IgG gammopathy. II. Determination of the antigenic specificity patterns of the IgG, IgA and IgM autoantibodies for the subclasses of IgG. Immunology 35: 437-445.
2. Gearhart, P.J. and Cebra, J.J. 1979. Differentiated B lymphocytes. Potential to express particular antibody variable and constant regions depends on site of lymphoid tissue and antigen load. J. Exp. Med. 149: 216-227.
3. Grubb, A., et al. 1986. The molecular organization of the protein HC-IgA complex (HC-IgA). J. Biol. Chem. 261: 14313-14320.
4. Stavnezer-Nordgren, J. and Sirlin, S. 1986. Specificity of immunoglobulin heavy chain switch correlates with activity of germline heavy chain genes prior to switching. EMBO J. 5: 95-102.
5. Johansen, F.E., et al. 2001. The J chain is essential for polymeric Ig receptor-mediated epithelial transport of IgA. J. Immunol. 167: 5185-5192.
6. Braathen, R., et al. 2002. The carboxyl-terminal domains of IgA and IgM direct isotype-specific polymerization and interaction with the polymeric immunoglobulin receptor. J. Biol. Chem. 277: 42755-42762.

CHROMOSOMAL LOCATION

Genetic locus: IGHA1/IGHA2 (human) mapping to 14q32.33.

SOURCE

IgA (B-12) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of IgA of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IgA (B-12) is available conjugated to agarose (sc-166334 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166334 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166334 PE), fluorescein (sc-166334 FITC), Alexa Fluor® 488 (sc-166334 AF488), Alexa Fluor® 546 (sc-166334 AF546), Alexa Fluor® 594 (sc-166334 AF594) or Alexa Fluor® 647 (sc-166334 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166334 AF680) or Alexa Fluor® 790 (sc-166334 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

IgA (B-12) is recommended for detection of IgA_1 and IgA_2 of mouse, rat and 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).

Molecular Weight (predicted) of IgA: 38 kDa.

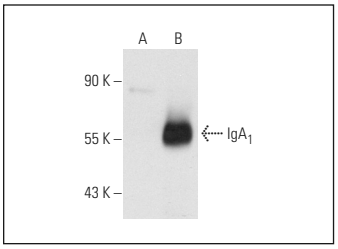
Molecular Weight (observed) of IgA: 52-69 kDa.

Positive Controls: IgA_1 (h2): 293T Lysate: sc-114781 or human plasma extract: sc-364374.

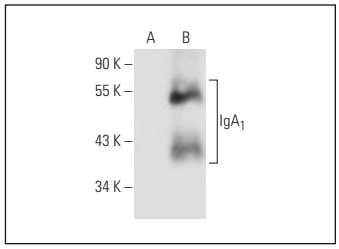
RECOMMENDED SUPPORT REAGENTS

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



IgA (B-12): sc-166334. Western blot analysis of IgA_1 expression in non-transfected: sc-117752 (**A**) and human IgA_1 transfected: sc-114781 (**B**) 293T whole cell lysates.



IgA (B-12): sc-166334. Western blot analysis of IgA_1 expression in non-transfected: sc-117752 (**A**) and human IgA_1 transfected: sc-114781 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Luti, S., et al. 2023. Chronic training induces metabolic and proteomic response in male and female basketball players: salivary modifications during in-season training programs. Healthcare 11: 241.

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.