SANTA CRUZ BIOTECHNOLOGY, INC.

IgA (47C12): sc-69785

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.
7. Lewis, M.J., et al. 2005. Structural requirements for the interaction of human IgA with the human polymeric Ig receptor. J. Immunol. 175: 6694-6701.
8. Mora, J.R., et al. 2006. Generation of gut-homing IgA-secreting B cells by intestinal dendritic cells. Science 314: 1157-1160.
9. Czyzewska-Buczynska, A., et al. 2006. IgA, an essential part of the immune system: selected issues. Postepy Hig. Med. Dosw. 61: 38-47.

CHROMOSOMAL LOCATION

Genetic locus: IGHA1 (human) mapping to 14p13.

SOURCE

IgA (47C12) is a mouse monoclonal antibody raised against purified IgA of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.1% stabilizer protein.

APPLICATIONS

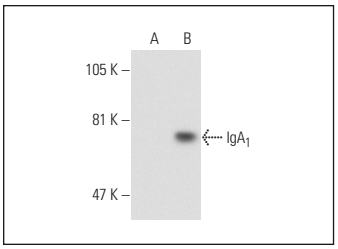
IgA (47C12) is recommended for detection of IgA of human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution to be determined by researcher, dilution range 1:50-1:2500), immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:50-1:2500) and solid phase ELISA (starting dilution to be determined by researcher, dilution range 1:30-1:5000).

Molecular Weight (predicted) of IgA: 38 kDa.

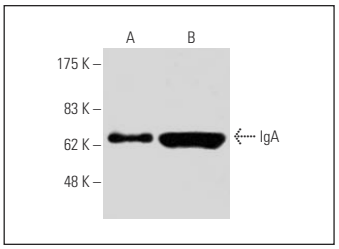
Molecular Weight (observed) of IgA: 52-69 kDa.

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

DATA



IgA (47C12): sc-69785. 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 (47C12) : sc-69785. Western blot analysis of IgA purified from human plasma (**A**) and in human plasma (**B**).

SELECT PRODUCT CITATIONS

1. Muto, M., et al. 2017. Toll-like receptor 9 stimulation induces aberrant expression of a proliferation-inducing ligand by tonsillar germinal center B cells in IgA nephropathy. J. Am. Soc. Nephrol. 28: 1227-1238.

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.