

# IgA (5E648): sc-71324

## 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  $\alpha$ -chain, and the light chains are either  $\kappa$ - or  $\lambda$ - 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., Welch, E. and Triesmann, H.W., Jr. 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., Mendez, E., Fernandez-Luna, J.L., Lopez, C., Mihaesco, E. and Vaerman, J.P. 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., Braathen, R. and Brandtzaeg, P. 2001. The J chain is essential for polymeric Ig receptor-mediated epithelial transport of IgA. *J. Immunol.* 167: 5185-5192.
6. Braathen, R., Sorensen, V., Brandtzaeg, P., Sandlie, I. and Johansen, F.E. 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., Pleass, R.J., Batten, M.R., Atkin, J.D. and Woof, J.M. 2005. Structural requirements for the interaction of human IgA with the human polymeric Ig receptor. *J. Immunol.* 175: 6694-6701.
8. Mora, J.R., Iwata, M., Eksteen, B., Song, S.Y., Junt, T., Senman, B., Otipoby, K.L., Yokota, A., Takeuchi, H., Ricciardi-Castagnoli, P., Rajewsky, K., Adams, D.H. and von Andrian, U.H. 2006. Generation of gut-homing IgA-secreting B cells by intestinal dendritic cells. *Science* 314: 1157-1160.
9. Czyzewska-Buczynska, A., Lewandowicz-Uszynska, A. and Jankowski, A. 2006. IgA, an essential part of the immune system: selected issues. *Postepy Hig. Med. Dosw.* 61: 38-47.

## STORAGE

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

## CHROMOSOMAL LOCATION

Genetic locus: IGHA1/IGHA2 (human) mapping to 14p13.

## SOURCE

IgA (5E648) is a mouse monoclonal antibody raised against purified IgA of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

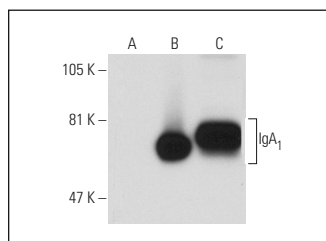
IgA (5E648) is recommended for detection of  $\alpha$ -chain of IgA<sub>1</sub> and IgA<sub>2</sub> of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase 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<sub>1</sub> (h2): 293T Lysate: sc-114781 or human plasma extract: sc-364374.

## DATA



IgA (5E648): sc-71324. Western blot analysis of IgA<sub>1</sub> expression in non-transfected 293T: sc-117752 (A), human IgA<sub>1</sub> transfected 293T: sc-114781 (B) and human PBL (C) whole cell lysates.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.