

H2-I/Ab (DaB2): sc-65383

BACKGROUND

Major histocompatibility complex (MHC) molecules form an integral part of the immune response system. They are cell-surface receptors that bind foreign peptides and present them to cytotoxic T lymphocytes (CTLs). MHC class I molecules consist of two polypeptide chains, an α or heavy chain and a non-covalently associated protein, β -2-Microglobulin. MHC class II molecules consist of a non-covalent complex of an α and β chain and are involved in antigen presentation by antigen presenting cells (APCs) to CD4⁺ T cells. They are expressed on APCs including B cells, macrophages, monocytes and dendritic cells, and are inducible by interferon- γ on a number of other cells, such as endothelium and epithelial cells. The mouse H2-Ab locus is orthologous to human DQB, which varies from typical class II genes in that both the α and β chains are polymorphic. The differential structural properties of MHC class I and class II molecules account for their respective roles in activating different populations of T lymphocytes.

REFERENCES

- Ozato, K. and Sachs, D.H. 1981. Monoclonal antibodies to mouse MHC antigens. III. Hybridoma antibodies reacting to antigens of the H-2b haplotype reveal genetic control of isotype expression. *J. Immunol.* 126: 317-321.
- Larhammar, D., Hammerling, U., Denaro, M., Lund, T., Flavell, R.A., Rask, L. and Peterson, P.A. 1983. Structure of the murine immune response I-A β locus: sequence of the I-A β gene and an adjacent β chain second domain exon. *Cell* 34: 179-188.
- Cresswell, P. 1994. Assembly, transport and function of MHC class II molecules. *Annu. Rev. Immunol.* 12: 259-293.
- Muhlethaler-Mottet, A., Otten, L.A., Steimle, V. and Mach, B. 1997. Expression of MHC class II molecules in different cellular and functional compartments is controlled by differential usage of multiple promoters of the transactivator CIITA. *EMBO J.* 16: 2851-2860.
- Macleod, D., Ali, R.R. and Bird, A. 1998. An alternative promoter in the mouse major histocompatibility complex class II I-A β gene: implications for the origin of CpG islands. *Mol. Cell Biol.* 18: 4433-4443.
- Lloberas, J., Soler, C. and Celada, A. 1999. Mechanism of I-A β gene expression. *Microbes Infect.* 1: 935-941.
- Honjo, K., Xu, X.Y. and Bucy, R.P. 2000. Heterogeneity of T cell clones specific for a single indirect alloantigenic epitope (I-Ab/H-2Kd54-68) that mediate transplant rejection. *Transplantation* 70: 1516-1524.
- Villadangos, J.A. 2001. Presentation of antigens by MHC class II molecules: getting the most out of them. *Mol. Immunol.* 38: 329-346.
- Tian, C., Bagley, J., Cretin, N., Seth, N., Wucherpfennig, K.W. and Iacomini, J. 2004. Prevention of type 1 diabetes by gene therapy. *J. Clin. Invest.* 114: 969-978.

CHROMOSOMAL LOCATION

Genetic locus: H2-Ab1 (mouse) mapping to 17 B1.

SOURCE

H2-I/Ab (DaB2) is a mouse monoclonal antibody raised against C57B1 splenocytes of mouse origin.

PRODUCT

Each vial contains 100 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

H2-I/Ab (DaB2) is recommended for detection of MHC class II I-Ab haplotype of mouse origin by immunofluorescence and immunohistochemistry on frozen sections (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 μ g per 1 x 10⁶ cells).

Molecular Weight of H2-I/Ab: 30 kDa.

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.