

## H2-I/Ab (28-16-8S): sc-59197

### 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  $\alpha$  or heavy chain and a non-covalently associated protein,  $\beta$ -2-Microglobulin. MHC class II molecules consist of a non-covalent complex of an  $\alpha$  and  $\beta$  chain and are involved in antigen presentation by antigen presenting cells (APCs) to CD4<sup>+</sup> T cells. They are expressed on APCs including B cells, macrophages, monocytes and dendritic cells, and are inducible by interferon- $\gamma$  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  $\alpha$  and  $\beta$  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 $\beta$  locus: sequence of the I-A $\beta$  gene and an adjacent  $\beta$  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 $\beta$  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 $\beta$  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.

### RESEARCH USE

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

### SOURCE

H2-I/Ab (28-16-8S) is a mouse monoclonal antibody raised against MHC class II H2-I/Ab of mouse origin.

### PRODUCT

Each vial contains 100  $\mu$ g IgM in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

### APPLICATIONS

H2-I/Ab (28-16-8S) is recommended for detection of MHC class II H2-I/Ab of mouse origin by flow cytometry (1  $\mu$ g per  $1 \times 10^6$  cells); may cross-react with H2-I/Ad.

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.

### PROTOCOLS

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