MHC class Ib (130): sc-18832

SANTA CRUZ®
BIOTECHNOLOGY

The Power to Question

BACKGROUND

Major histocompatibility complex (MHC, human leukocyte antigen (HLA) mole-cules are cell-surface receptors that bind foreign peptides and present them to T lymphocytes. MHC class I molecules consist of two polypeptide chains, an α or heavy chain, and a non-covalently associated protein, β2-microglobulin. Cytotoxic T lymphocytes bind antigenic peptides presented by MHC class I molecules. Antigens that bind to MHC class I molecules are typically 8-10 residues in length and are stabilized in a peptide binding groove. MHC class II molecules are encoded by polymorphic MHC genes and consist of a non-covalent complex of an a and b chain. Helper T lymphocytes bind antigenic peptides presented by MHC class II molecules. MHC class II molecules bind 13-18 amino acid antigenic peptides. Accumulating in endosomal/lysosomal compartments and on the surface of B cells, HLA-DM and -DO molecules regulate binding of exogenous peptides to class II molecules (HLA-DR) by sustaining a conformation that favors peptide exchange. 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

1. Janeway, C.A., Jr., Travers, P., Hunt, S. and Walport, M. 1997. Immunobiology: The Immune System in Health and Disease. 3rd Edition. New York: Garland Publishing.

2. Little, A.M. and Parham, P. 1999. Polymorphism and evolution of HLA class I and II genes and molecules. Rev. Immunogenet. 1: 105-123.

3. Gunther, E. and Walter, L. 2001. The major histocompatibility complex of the rat *(Rattus norvegicus).* Immunogenetics 53: 520-542.

4. Van Kaer, L. 2001. Accessory proteins that control the assembly of MHC molecules with peptides. Immunol. Res. 23: 205-214.

5. Fischer, G.F. and Mayr, W.R. 2001. Molecular genetics of the HLA complex. Wien. Klin. Wochenschr. 113: 814-824.

CHROMOSOMAL LOCATION

Genetic locus: H2-K1 (mouse) mapping to 17 B1.

SOURCE

MHC class Ib (130) is a Armenian hamster monoclonal antibody raised against recombinant MHC class I-b antigen M3 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available azide-free for functional blocking of T cells, sc-18832 L, 200 µg/0.1 ml.

MHC class Ib (130) is available conjugated to either phycoerythrin (sc-18832 PE) or fluorescein (sc-18832 FITC), 200 µg/ml, for IF, IHC(P) and FCM.

STORAGE

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

APPLICATIONS

MHC class Ib (130) is recommended for detection of the murine MHC class 1b molecule H2-M3 of mouse and rat origin by immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of MHC class Ib: 39 kDa.

SELECT PRODUCT CITATIONS

1. Liu, S., Tian, Y., Chlenski, A., Yang, Q., Zage, P., Salwen, H.R., Crawford, S.E. and Cohn, S.E. 2005. Cross-talk between Schwann cells and neuroblasts influences the biology of neuroblastoma xenografts. Am. J. Pathol. 166: 891-900.

2. Liu, S., Tian, Y., Chlenski, A., Yang, Q., Salwen, H.R. and Cohn, S.L.. 2005. "Cross-talk" between Schwannian stroma and neuroblasts promotes neu-roblastoma tumor differentiation and inhibits angiogenesis. Cancer Lett. 228: 125-131.

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.