SANTA CRUZ BIOTECHNOLOGY, INC.

MHC class IIβ (KSK 001-02): sc-59323

The Power to Question

BACKGROUND

Major histocompatibility complex (MHC) molecules, also designated human leukocyte antigen (HLA) molecules, 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 β2-Microglobulin, a non-covalently associated protein. 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 α and β chain. Helper T lymphocytes bind antigenic peptides presented by MHC class II molecules. MHC class II molecules bind 13-18 amino acid antigenic peptides. Accumulat-ing 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. Murphy, D.B., et al. 1989. A novel MHC class II epitope expressed in thymic medulla but not cortex. Nature 338: 765-768.
2. Rudensky, A., et al. 1991. On the complexity of self. Nature 353: 660-662.
3. Agger, R., et al. 2000. Characterization of murine dendritic cells derived from adherent blood mononuclear cells *in vitro*. Scand. J. Immunol. 52: 138-147.
4. Viret, C. and Janeway, C.A. 2000. Functional and phenotypic evidence for presentation of E α 52-68 structurally related self-peptide(s) in I-E α-deficient mice. J. Immunol. 164: 4627-4634.
5. Fischer, G.F. and Mayr, W.R. 2001. Molecular genetics of the HLA complex. Wien. Klin. Wochenschr. 113: 814-824.
6. Günther, E. and Walter, L. 2001. The major histocompatibility complex of the rat *(Rattus norvegicus).* Immunogenetics 53: 520-542.
7. Little, A.M. and Parham, P. 2001. Polymorphism and evolution of HLA class I and II genes and molecules. Rev. Immunogenet. 1: 105-123.
8. Van Kaer, L. 2001. Accessory proteins that control the assembly of MHC molecules with peptides. Immunol. Res. 23: 205-214.
9. Zaliauskiene, L., et al. 2002. Enhancement of MHC class II-restricted responses by receptor-mediated uptake of peptide antigens. J. Immunol. 169: 2337-2345.

SOURCE

MHC class IIβ (KSK 001-02) is a mouse monoclonal antibody raised against white blood cells of avian origin.

PRODUCT

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

APPLICATIONS

MHC class IIβ (KSK 001-02) is recommended for detection of both native and denatured forms of MHC class IIβ of avian origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

Molecular Weight of MHC class IIβ: 29/34 kDa.

SELECT PRODUCT CITATIONS

1. Treiber, C.D., et al. 2012. Clusters of iron-rich cells in the upper beak of pigeons are macrophages not magnetosensitive neurons. Nature 484: 367-370.
2. Treiber, C.D., et al. 2013. High resolution anatomical mapping confirms the absence of a magnetic sense system in the rostral upper beak of pigeons. Commun. Integr. Biol. 6: e24859.

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.