



MHC class II (ER-TR2): sc-59317

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 β -2-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 eight to ten 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. 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

- Murphy, D.B., Lo, D., Rath, S., Brinster, R.L., Flavell, R.A., Slanetz, A. and Janeway, C.A., Jr. 1989. A novel MHC class II epitope expressed in thymic medulla but not cortex. *Nature* 338: 765-768.
- AYu, R., Rath, S., Preston-Hurlburt, P., Murphy, D.B. and Janeway, C.A., Jr. 1991. On the complexity of self. *Nature* 353: 660-662.
- Little, A.M. and Parham, P. 1999. Polymorphism and evolution of HLA class I and II genes and molecules. *Rev. Immunogenet.* 1: 105-123.
- Agger, R., Petersen, M.S., Toldbod, H.E., Holtz, S., Dagnaes-Hansen, F., Johnsen, B.W., Bolund, L. and Hokland, M. 2000. Characterization of murine dendritic cells derived from adherent blood mononuclear cells *in vitro*. *Scand. J. Immunol.* 52: 138-147.
- Viret, C. and Janeway, C.A, Jr. 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.
- Fischer, G.F. and Mayr, W.R. 2001. Molecular genetics of the HLA complex. *Wien. Klin. Wochenschr.* 113: 814-824.
- Günther, E. and Walter, L. 2001. The major histocompatibility complex of the rat (*Rattus norvegicus*). *Immunogenetics* 53: 520-542.
- Van Kaer, L. 2001. Accessory proteins that control the assembly of MHC molecules with peptides. *Immunol. Res.* 23: 205-214.
- Zalianskiene, L., Kang, S., Sparks, K., Zinn, K.R., Schwiebert, L.M., Weaver, C.T. and Collawn, J.F. 2002. Enhancement of MHC class II-restricted responses by receptor-mediated uptake of peptide antigens. *J. Immunol.* 169: 2337-2345.

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: H2-Ea-ps (mouse) mapping to 17 B1.

SOURCE

MHC class II (ER-TR2) is a rat monoclonal antibody raised against full length MHC Class II of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MHC class II (ER-TR2) is recommended for detection of MHC class II of mouse origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 μ g per 1 x 10⁶ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MHC class II siRNA (m): sc-72123, MHC class II shRNA Plasmid (m): sc-72123-SH and MHC class II shRNA (m) Lentiviral Particles: sc-72123-V.

Molecular Weight of MHC class II α : 34 kDa.

Molecular Weight of MHC class II β : 29 kDa.

SELECT PRODUCT CITATIONS

- Lian, Z.R., Xu, Y.F., Wang, X.B., Gong, J.P. and Liu, Z.J. 2012. Suppression of histone deacetylase 11 promotes expression of IL-10 in Kupffer cells and induces tolerance following orthotopic liver transplantation in rats. *J. Surg. Res.* 174: 359-368.

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.