

MHC class I (34-2-12): sc-53723

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

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- Rudensky, AYu, et al. 1991. On the complexity of self. *Nature* 353: 660-662.
- Agger, R., et al. 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.
- Little, AM. and Parham, P. 2001. Polymorphism and evolution of HLA class I and II genes and molecules. *Rev. Immunogenet.* 1: 105-123.

CHROMOSOMAL LOCATION

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

SOURCE

MHC class I (34-2-12) is a mouse monoclonal antibody raised against (C57BL/6 x DBA/2)F1 splenocytes of mouse origin.

PRODUCT

Each vial contains 100 μ g IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

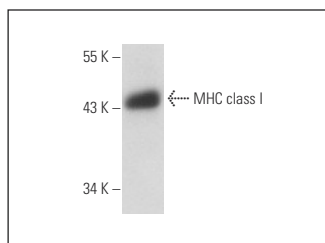
MHC class I (34-2-12) is recommended for detection of MHC class I of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 μ g per 1 x 10⁶ cells).

Suitable for use as control antibody for MHC class I siRNA (m): sc-106993, MHC class I shRNA Plasmid (m): sc-106993-SH and MHC class I shRNA (m) Lentiviral Particles: sc-106993-V.

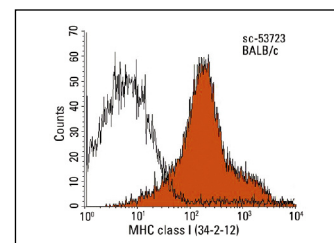
Molecular Weight of MHC class I: 46 kDa.

Positive Controls: mouse spleen extract: sc-2391 or CTL-2 cell lysate: sc-2242.

DATA



MHC class I (34-2-12): sc-53723. Western blot analysis of MHC class I expression in mouse spleen tissue extract.



MHC class I (34-2-12): sc-53723. Indirect FCM analysis of BALB/c splenocytes stained with MHC class I (34-2-12), followed by PE-conjugated goat anti-mouse IgG: sc-3738. Black line histogram represents the isotype control, normal mouse IgG_{2a}: sc-3878.

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 for detailed protocols and support products.



See **MHC class I (ER-HR52): sc-59199** for MHC class I antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647.