

HLA class I (MEM-147): sc-51672

BACKGROUND

The major histocompatibility complex (MHC) is a high genomic density gene family that plays an important role in the immune system, autoimmunity and reproductive success. Human MHC genes are referred to as human leukocyte antigen (HLA) genes. HLA 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 HLA class I molecules. Antigens that bind to HLA class I molecules are typically 8-10 residues in length and are stabilized in a peptide binding groove. HLA class II molecules are encoded by polymorphic HLA genes and consist of a non-covalent complex of an α and β chain. Helper T lymphocytes bind antigenic peptides presented by HLA class II molecules. HLA 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 HLA 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. Van Acker, A., Conte, F., Hulin, N. and Urbain, J. 2001. The epitope recognized by pan-HLA class I-reactive monoclonal antibody W6/32 and its relationship to unusual stability of the HLA-B27/ β -2-Microglobulin complex. Immunogenetics 53: 440-446.
4. Fischer, G.F. and Mayr, W.R. 2001. Molecular genetics of the HLA complex. Wien. Klin. Wochenschr. 113: 814-824.
5. Gunther, E. and Walter, L. 2001. The major histocompatibility complex of the rat (*Rattus norvegicus*). Immunogenetics 53: 520-542.
6. Van Kaer, L. 2001. Accessory proteins that control the assembly of MHC molecules with peptides. Immunol. Res. 23: 205-214.

CHROMOSOMAL LOCATION

Genetic locus: HLA-A (human) mapping to 6p22.1.

SOURCE

HLA class I (MEM-147) is a mouse monoclonal antibody raised against PHA-activated peripheral blood lymphocytes of human origin.

PRODUCT

Each vial contains 100 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HLA class I (MEM-147) is available conjugated phycoerythrin (sc-51672 PE, 100 tests in 2 ml), for IF, IHC(P) and FCM.

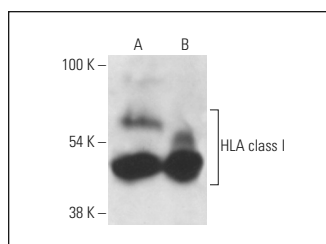
APPLICATIONS

HLA class I (MEM-147) is recommended for detection of all classical HLA class I molecules in native cell-surface forms of human origin by Western Blotting (non-reducing) (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)] and flow cytometry (1 μ g per 1×10^6 cells).

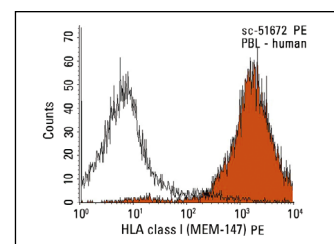
Molecular Weight of HLA class I: 46 kDa.

Positive Controls: Ramos cell lysate: sc-2216, Raji whole cell lysate: sc-364236 or NCI-H929 whole cell lysate.

DATA



HLA class I (MEM-147): sc-51672. Western blot analysis of HLA class I expression in Ramos (A) and NCI-H929 (B) whole cell lysates.



HLA class I (MEM-147): sc-51672. Indirect FCM analysis of human peripheral blood leukocytes stained with HLA class I (MEM-147), followed by PE-conjugated anti-mouse IgG₁: sc-3764. Black line histogram represents the isotype control, normal mouse IgG₁: sc-3877.

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.



See **HLA class I (HP-1F7): sc-69892** for HLA class I antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.