

HLA class I (HP-1F7): sc-69892

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. 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 8-10 residues in length and are stabilized in a peptide binding groove. 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.

CHROMOSOMAL LOCATION

Genetic locus: HLA-A (human) mapping to 6p22.1, HLA-B (human) mapping to 6p21.33.

SOURCE

HLA class I (HP-1F7) is a mouse monoclonal antibody raised against NK cells of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available azide-free for functional assays for antagonizing the interaction of NK inhibitory receptors with class I molecules, sc-69892 L, 200 μ g/0.1 ml.

HLA class I (HP-1F7) is available conjugated to agarose (sc-69892 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-69892 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-69892 PE), fluorescein (sc-69892 FITC), Alexa Fluor[®] 488 (sc-69892 AF488), Alexa Fluor[®] 546 (sc-69892 AF546), Alexa Fluor[®] 594 (sc-69892 AF594) or Alexa Fluor[®] 647 (sc-69892 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-69892 AF680) or Alexa Fluor[®] 790 (sc-69892 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

HLA class I (HP-1F7) is recommended for detection of all classical HLA class I α as well as HLA-B (MHC class I β) of human 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)] and flow cytometry (1 μ g per 1 x 10⁶ cells).

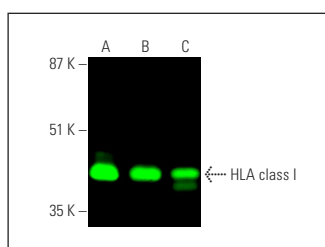
Molecular Weight of HLA class I: 46 kDa.

Positive Controls: NCI-H929 whole cell lysate: sc-364786, Ramos cell lysate: sc-2216 or U-937 cell lysate: sc-2239.

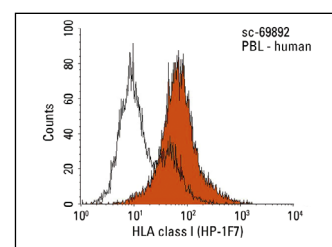
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



HLA class I (HP-1F7): sc-69892. Near-infrared western blot analysis of HLA class I expression in Ramos (A), NCI-H929 (B) and U-937 (C) whole cell lysates. Blocked with UltraCruz[®] Blocking Reagent: sc-516214. Detection reagent used: m-IgG κ BP-CFL 680: sc-516180.



HLA class I (HP-1F7): sc-69892. Indirect FCM analysis of human peripheral blood leukocytes stained with HLA class I (HP-1F7), followed by PE-conjugated goat anti-mouse IgG: sc-3738. Black line histogram represents the isotype control, normal mouse IgG₁: sc-3877.

SELECT PRODUCT CITATIONS

1. Takao, S., et al. 2010. The rapid induction of HLA-E is essential for the survival of antigen-activated naive CD4 T cells from attack by NK cells. *J. Immunol.* 185: 6031-6040.
2. Anido, J., et al. 2010. TGF- β receptor inhibitors target the CD44^{high}/Id1^{high} glioma-initiating cell population in human glioblastoma. *Cancer Cell* 18: 655-668.
3. Hurtado, C., et al. 2011. The African swine fever virus lectin EP153R modulates the surface membrane expression of MHC class I antigens. *Arch. Virol.* 156: 219-234.
4. Heidenreich, S., et al. 2012. Impact of the NK cell receptor LIR-1 (ILT-2/CD85J/LILRB1) on cytotoxicity against multiple myeloma. *Clin. Dev. Immunol.* 2012: 652130.
5. Esposito, L., et al. 2014. Investigation of soluble and transmembrane CTLA-4 isoforms in serum and microvesicles. *J. Immunol.* 193: 889-900.
6. Sreejit, G., et al. 2014. The ESAT-6 protein of *Mycobacterium tuberculosis* interacts with β -2-Microglobulin (β 2M) affecting antigen presentation function of macrophage. *PLoS Pathog.* 10: e1004446.
7. Chen, H., et al. 2020. Antagonistic anti-LILRB1 monoclonal antibody regulates antitumor functions of natural killer cells. *J. Immunother.* Cancer 8: e000515.

STORAGE

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

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