SANTA CRUZ BIOTECHNOLOGY, INC.

HLA-E (MEM-E/08): sc-51624

BACKGROUND

Major histocompatibility complex (MHC) molecules, which include human leukocyte antigens (HLAs), form an integral part of the immune response system. They are cell-surface receptors that bind foreign peptides and present them to cytotoxic T lymphocytes (CTLs). MHC class I molecules consist of two polypeptide chains, an α or heavy chain and a non-covalently associated protein, β-2-Microglobulin. The differential structural properties of MHC class I and class II molecules account for their respective roles in activating different populations of T lymphocytes. HLA-A is a MHC class I heavy chain molecule that plays a central role in the immune system by presenting peptides derived from the endoplasmic reticulum lumen. HLA-B and HLA-C are proteins encoded by closely related genes that also exist in the MHC class I. HLA-E belongs to the HLA class I heavy chain paralogs. HLA-E is a heterodimer consisting of a heavy chain and a light chain. The heavy chain is anchored in the membrane. HLA-E binds a restricted subset of peptides derived from the leader peptides of other class I molecules.

REFERENCES

1. Menier, C., et al. 2003. Characterization of monoclonal antibodies recognizing HLA-G or HLA-E: new tools to analyze the expression of nonclassical HLA class I molecules. Hum. Immunol. 64: 315-326.
2. Mazzarino, P., et al. 2005. Identification of effector-memory CMV-specific T lymphocytes that kill CMV-infected target cells in an HLA-E-restricted fashion. Eur. J. Immunol. 35: 3240-3247.
3. Palmisano, G.L., et al. 2005. HLA-E surface expression is independent of the availability of HLA class I signal sequence-derived peptides in human tumor cell lines. Hum. Immunol. 66: 1-12.
4. Moya-Quiles, M.R., et al. 2005. Lack of association between HLA-E polymorphism and primary cutaneous melanoma in Spanish patients. J. Dermatol. Sci. 40: 62-64.
5. Joly, E., et al. 2006. The orthology of HLA-E and H2-Qa1 is hidden by their concerted evolution with other MHC class I molecules. Biol. Direct. 1: 2.
6. Bhalla, A., et al. 2006. Comparison of the expression of human leukocyte antigen HLA-G and HLA-E in women with normal pregnancy and those with recurrent miscarriage. Reproduction 131: 583-589.
7. Ishitani, A., et al. 2006. The involvement of HLA-E and -F in pregnancy. J. Reprod. Immunol. 69: 101-113.
8. Lajoie, J., et al. 2006. Genetic variants in nonclassical major histocompatibility complex class I human leukocyte antigen HLA-E and HLA-G molecules are associated with susceptibility to heterosexual acquisition of HIV-1. J. Infect. Dis. 193: 298-301.

CHROMOSOMAL LOCATION

Genetic locus: HLA-E (human) mapping to 6p21.33.

SOURCE

HLA-E (MEM-E/08) is a mouse monoclonal antibody raised against bacterially expressed recombinant HLA-E refolded with β-2-Microglobulin and peptide of human 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

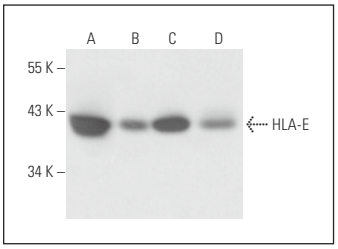
HLA-E (MEM-E/08) is recommended for detection of native surface-expressed HLA-E of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for HLA-E siRNA (h): sc-62470, HLA-E shRNA Plasmid (h): sc-62470-SH and HLA-E shRNA (h) Lentiviral Particles: sc-62470-V.

Molecular Weight of HLA-E: 40 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207, AML-193 whole cell lysate: sc-364182 or CCRF-CEM cell lysate: sc-2225.

DATA



HLA-E (MEM-E/08): sc-51624. Western blot analysis of HLA-E expression in human PBL (**A**), BJAB (**B**), CCRF-CEM (**C**) and AML-193 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Parsons, M.S., et al. 2010. Distinct phenotype of unrestricted cytotoxic T lymphocytes from human immunodeficiency virus-infected individuals. J. Clin. Immunol. 30: 272-279.
2. Corrah, T.W., et al. 2011. Reappraisal of the relationship between the HIV-1-protective single-nucleotide polymorphism 35 kilobases upstream of the HLA-C gene and surface HLA-C expression. J. Virol. 85: 3367-3374.

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.