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HLA-C Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP17872c

Product Information

Application	WB, E
Primary Accession	P10321
Other Accession	Q29865, Q95604, Q29960, P30510, P30508, P30505, Q29963, Q9TNN7, P30504, P04222, P30484, NP_002108.4
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB21680
Calculated MW	40649
Antigen Region	66-93

Additional Information

Gene ID	3107
Other Names	HLA class I histocompatibility antigen, Cw-7 alpha chain, MHC class I antigen Cw*7, HLA-C, HLAC
Target/Specificity	This HLA-C antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 66-93 amino acids from the Central region of human HLA-C.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	HLA-C Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	HLA-C (HGNC:4933)
Synonyms	HLAC

Function	Antigen-presenting major histocompatibility complex class I (MHCI) molecule with an important role in reproduction and antiviral immunity (PubMed:11172028, PubMed:20104487, PubMed:20439706, PubMed:20972337, PubMed:24091323, PubMed:28649982, PubMed:29312307). In complex with B2M/beta 2 microglobulin displays a restricted repertoire of self and viral peptides and acts as a dominant ligand for inhibitory and activating killer immunoglobulin receptors (KIRs) expressed on NK cells (PubMed:16141329). In an allogeneic setting, such as during pregnancy, mediates interaction of extravillous trophoblasts with KIR on uterine NK cells and regulate trophoblast invasion necessary for placentation and overall fetal growth (PubMed:20972337, PubMed:24091323). During viral infection, may present viral peptides with low affinity for KIRs, impeding KIR-mediated inhibition through peptide antagonism and favoring lysis of infected cells (PubMed:20439706). Presents a restricted repertoire of viral peptides on antigen-presenting cells for recognition by alpha-beta T cell receptor (TCR) on HLA-C-restricted CD8-positive T cells, guiding antigen-specific T cell immune response to eliminate infected cells, particularly in chronic viral infection settings such as HIV-1 or CMV infection (PubMed:11172028, PubMed:20104487, PubMed:28649982). Both the peptide and the MHC molecule are recognized by TCR, the peptide is responsible for the fine specificity of antigen recognition and MHC residues account for the MHC restriction of T cells (By similarity). Typically presents intracellular peptide antigens of 9 amino acids that arise from cytosolic proteolysis via proteasome. Can bind different peptides containing allele-specific binding motifs, which are mainly defined by anchor residues at position 2 and 9. Preferentially displays peptides having a restricted repertoire of hydrophobic or aromatic amino acids (Phe, Ile, Leu, Met, Val and Tyr) at the C-terminal anchor (PubMed:25311805, PubMed:8265661).
Cellular Location	Cell membrane; Single-pass type I membrane protein. Endoplasmic reticulum membrane; Single-pass membrane protein
Tissue Location	Ubiquitous. Highly expressed in fetal extravillous trophoblasts in the decidua basalis (at protein level)

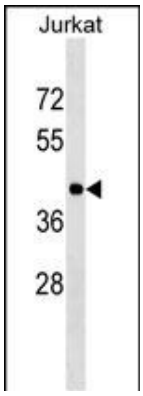
Background

HLA-C belongs to the HLA class I heavy chain paralogues. This class I molecule is a heterodimer consisting of a heavy chain and a light chain (beta-2 microglobulin). The heavy chain is anchored in the membrane. Class I molecules play a central role in the immune system by presenting peptides derived from endoplasmic reticulum lumen. They are expressed in nearly all cells. The heavy chain is approximately 45 kDa and its gene contains 8 exons. Exon one encodes the leader peptide, exons 2 and 3 encode the alpha1 and alpha2 domain, which both bind the peptide, exon 4 encodes the alpha3 domain, exon 5 encodes the transmembrane region, and exons 6 and 7 encode the cytoplasmic tail. Polymorphisms within exon 2 and exon 3 are responsible for the peptide binding specificity of each class one molecule. Typing for these polymorphisms is routinely done for bone marrow and kidney transplantation. Over one hundred HLA-C alleles have been described

References

Martin, M.P., et al. Immunogenetics 62 (11-12), 761-765 (2010) :
Strange, A., et al. Nat. Genet. 42(11):985-990(2010)
Noble, J.A., et al. Diabetes 59(11):2972-2979(2010)
Honeyborne, I., et al. J. Virol. 84(21):11279-11288(2010)
Healy, B.C., et al. Neurology 75(7):634-640(2010)

Images



HLA-C Antibody (Center) (Cat. #AP17872c) western blot analysis in Jurkat cell line lysates (35ug/lane).This demonstrates the HLA-C antibody detected the HLA-C protein (arrow).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.