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KLRC1 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8629B

Product Information

Application	WB, IHC-P, FC, IF, E
Primary Accession	P26715
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	26314
Antigen Region	180-206

Additional Information

Gene ID	3821
Other Names	NKG2-A/NKG2-B type II integral membrane protein, CD159 antigen-like family member A, NK cell receptor A, NKG2-A/B-activating NK receptor, CD159a, KLRC1, NKG2A
Target/Specificity	This KLRC1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 180-206 amino acids from the C-terminal region of human KLRC1.
Dilution	WB~~1:2000 IHC-P~~1:100~500 FC~~1:25 IF~~1:25 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	KLRC1 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	KLRC1
Synonyms	NKG2A {ECO:0000303|PubMed:18083576}
Function	Immune inhibitory receptor involved in self-nonself discrimination. In

complex with KLRD1 on cytotoxic and regulatory lymphocyte subsets, recognizes non-classical major histocompatibility (MHC) class Ib molecule HLA-E loaded with self-peptides derived from the signal sequence of classical MHC class Ia molecules. Enables cytotoxic cells to monitor the expression of MHC class I molecules in healthy cells and to tolerate self (PubMed:18083576, PubMed:37264229, PubMed:9430220, PubMed:9486650). Upon HLA-E-peptide binding, transmits intracellular signals through two immunoreceptor tyrosine-based inhibition motifs (ITIMs) by recruiting INPP5D/SHP-1 and INPPL1/SHP-2 tyrosine phosphatases to ITIMs, and ultimately opposing signals transmitted by activating receptors through dephosphorylation of proximal signaling molecules (PubMed:12165520, PubMed:9485206). Key inhibitory receptor on natural killer (NK) cells that regulates their activation and effector functions (PubMed:30860984, PubMed:9430220, PubMed:9485206, PubMed:9486650). Dominantly counteracts T cell receptor signaling on a subset of memory/effector CD8-positive T cells as part of an antigen-driven response to avoid autoimmunity (PubMed:12387742). On intraepithelial CD8-positive gamma-delta regulatory T cells triggers TGFB1 secretion, which in turn limits the cytotoxic programming of intraepithelial CD8-positive alpha-beta T cells, distinguishing harmless from pathogenic antigens (PubMed:18064301). In HLA-E-rich tumor microenvironment, acts as an immune inhibitory checkpoint and may contribute to progressive loss of effector functions of NK cells and tumor-specific T cells, a state known as cell exhaustion (PubMed:30503213, PubMed:30860984).

Cellular Location

Cell membrane; Single-pass type II membrane protein

Tissue Location

Predominantly expressed in NK cells (at protein level) (PubMed:20952657, PubMed:9430220, PubMed:9485206). Expressed in intraepithelial CD8-positive T cell subsets with higher frequency in gamma-delta T cells than alpha-beta T cells (at protein level) (PubMed:18064301). Expressed in memory gamma-delta T cells (at protein level) (PubMed:20952657). Restricted to a subset of memory/effector CD8-positive alpha-beta T cells (at protein level) (PubMed:12387742) Expressed in intratumoral NK and CD8-positive T cells (PubMed:30503213). Expressed in melanoma-specific cytotoxic T cell clones (at protein level) (PubMed:9485206). KLRD1-KLRC1 and KLRD1-KLRC2 are differentially expressed in NK and T cell populations, with only minor subsets expressing both receptor complexes (at protein level) (PubMed:20952657).

Background

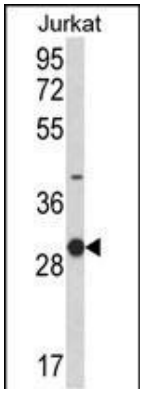
Natural killer (NK) cells are lymphocytes that can mediate lysis of certain tumor cells and virus-infected cells without previous activation. They can also regulate specific humoral and cell-mediated immunity. This protein belongs to the killer cell lectin-like receptor family, also called NKG2 family, which is a group of transmembrane proteins preferentially expressed in NK cells. This family of proteins is characterized by the type II membrane orientation and the presence of a C-type lectin domain. This protein forms a complex with another family member, KLRD1/CD94, and has been implicated in the recognition of the MHC class I HLA-E molecules in NK cells.

References

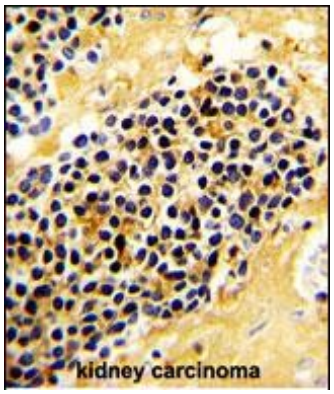
Brooks,A.G., et.al., J. Exp. Med. 185 (4), 795-800 (1997)
Plougastel,B., et.al., Immunogenetics 44 (4), 286-291 (1996)

Images

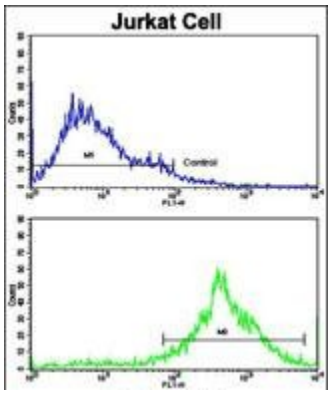
Western blot analysis of KLRC1 Antibody (C-term) (Cat.



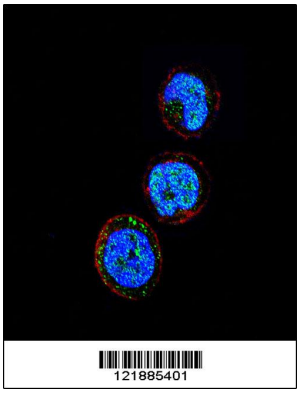
#AP8629b) in Jurkat cell line lysates (35ug/lane). KLRC1 (arrow) was detected using the purified Pab.



Formalin-fixed and paraffin-embedded human kidney carcinoma with KLRC1 Antibody (C-term), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



Flow cytometric analysis of jurkat cells using KLRC1 Antibody (C-term)(bottom histogram) compared to a negative control cell (top histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.



Confocal immunofluorescent analysis of KLRC1 Antibody (C-term)(Cat#AP8629b) with MDA-MB435 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green).Actin filaments have been labeled with Alexa Fluor 555 phalloidin (red).DAPI was used to stain the cell nuclear (blue).