10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

KLRC1 Antibody (N-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP12570a

Product Information

Application	WB, IF, E
Primary Accession	P26715
Other Accession	NP_998822.1, NP_002250.1, NP_015567.1, NP_998823.1
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB31191
Calculated MW	26314
Antigen Region	1-30

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 1-30 amino acids from the N-terminal region of human KLRC1.
Dilution	WB~~1:1000 IF~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. 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 (N-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).

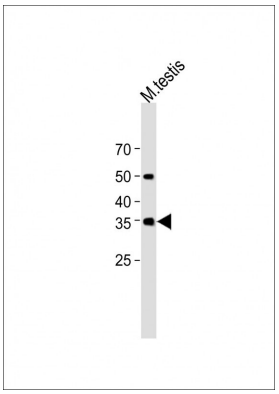
Background

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. The protein encoded by this gene 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. The genes of NKG2 family members form a killer cell lectin-like receptor gene cluster on chromosome 12. Four alternatively spliced transcript variants encoding two distinct isoforms have been observed. [provided by RefSeq].

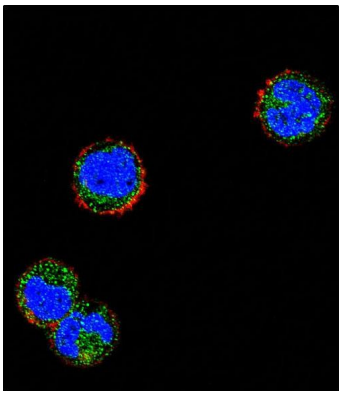
References

Ucisik-Akkaya, E., et al. Mol. Hum. Reprod. 16(10):770-777(2010)
Ma, J., et al. J. Med. Virol. 82(9):1501-1507(2010)
Harrison, R.J., et al. Clin. Exp. Immunol. 161(2):306-314(2010)
Rose, J.E., et al. Mol. Med. 16 (7-8), 247-253 (2010) :
Beziat, V., et al. PLoS ONE 5 (8), E11966 (2010) :

Images



All lanes : Anti-KLRC1 Antibody (N-term) at 1:2000 dilution + mouse testis lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size : 35 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Confocal immunofluorescent analysis of KLRC1 Antibody (N-term)(Cat#AP12570a) 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).