

Analyte Specific Reagent.

Analytical and performance characteristics are not established.

SPECIFICITY

NK cells are innate immune effectors: they can exert natural cytotoxicity and secrete cytokines and chemokines in the absence of sensitization (1). NK cells also mediate antibody-dependent cellular cytotoxicity (ADCC) via FcγRIII (CD16). Using multiple receptors, NK cells can select (with Natural Killer Receptors: NKRs) and engage (with NKG2D (2), and Natural Cytotoxicity Receptors: NCRs) a variety of target cells for their lysis. While the presence of HLA-Class I antigens on target cells can inhibit NK cells cytotoxicity, the absence of HLA-Class I antigens does not, by itself, activate NK cells: this is the basis of the "missing self" concept that refers to the negative regulation provided by inhibitory receptors when they sense adequate HLA-Class I molecules on target cells. The complex mosaic expression of activating or inhibiting receptors on the different NK cell subsets adds more possibilities to the regulation of NK cell activity. The KIR (Killer-cell Immunoglobulin-like Receptor) acronym is used to designate certain inhibitory or activating receptors of HLA-Class I molecules. These receptors are expressed on NK cells and on a subset of T cells. Reports on the KIR and CD nomenclatures have been published (3, 4).

KIR2DL5 gene is found in only a fraction of individuals in each population, and it is represented in the human genome by two genes, KIR2DL5A and KIR2DL5B. KIR2DL5 has alleles with mRNA transcripts that are clonally distributed in NK and T lymphocytes. KIR2DL5 is predicted to encode a purely inhibitory receptor, according to its signaling motifs (two ITIMs and a transmembrane region lacking charged amino acid residues) and to the behavior of cells transfected with tagged or chimerical KIR2DL5 constructs (6, 7).

KIR2DL5, together with KIR2DL4, are the only members of a gene lineage coding for KIR with a D0–D2 organization of the Ig-like domains, which distinguishes them from all other KIR2Ds, having domains of the D1-D2 type. Despite the similar gene organization of KIR2DL4 and KIR2DL5, their predicted primary structures are only 79% identical (8). According to CD nomenclature, the KIR2DL5 molecule also known as CD158f (KIR, 2 extracellular Ig-like domain, long cytoplasmic tail, 5) is probably expressed as an approximately 60 kDa monomeric glycoprotein on the cell surface. In particular, it is expressed in a fraction of blood NK cells with the CD56dim phenotype and in a variable proportion of circulating T lymphocytes (5).

Upon tyrosine phosphorylation, KIR2DL5 recruits the Src homology region 2-containing protein tyrosine phosphatase-2 and, to a lesser extent, Src homology region 2-containing protein tyrosine phosphatase-1 (8). Ab-mediated cross-linking of KIR2DL5 inhibits NK cell cytotoxicity against murine FcR+ P815 cells. KIR2DL5 is thus an inhibitory receptor which may play a specialized role in innate immunity.

REAGENT

IOTest CD158f (KIR2DL5)-APC
Conjugated Antibody
PN B19716 - 0.5 mL - Liquid

Clone	UP-R1
Isotype	IgG1, Mouse
Immunogen	KIR2DL5-Ig fusion protein
Hybridoma	SP2/0 x balb/c
Source	Ascites fluid or supernatant of in vitro cultured hybridoma cells.
Purification	Affinity chromatography
Conjugation	Allophycocyanin (APC)
Molar Ratio	APC / Ig : 0.5 - 1.5
Fluorescence	Excites at 633/638 nm Emits at 660 nm

REAGENT CONTENTS

This antibody is provided in phosphate-buffered saline, containing 0.1% sodium azide and 2 mg/mL bovine serum albumin. Concentration: See lot specific Certificate of Analysis at www.beckmancoulter.com.

STATEMENTS OF WARNING

1. This reagent contains 0.1% sodium azide. Sodium azide under acid conditions yields hydrazoic acid, an extremely toxic compound. Azide compounds should be flushed with running water while being discarded. These precautions are recommended to avoid deposits in metal piping in which explosive conditions can develop. If skin or eye contact occurs, wash excessively with water.
2. Specimens, samples and all material coming in contact with them should be considered potentially infectious and disposed of with proper precautions.
3. Never pipet by mouth and avoid contact of samples with skin and mucous membranes.
4. Do not use antibody beyond the expiration date on the label.
5. Do not expose reagents to strong light during storage or incubation.
6. Avoid microbial contamination of reagents or incorrect results might occur.
7. Use good laboratory practices when handling this reagent.

STORAGE AND HANDLING CONDITIONS AND STABILITY

This reagent is stable up to the expiration date when stored at 2 – 8°C. Do not freeze. No reconstitution is necessary. This monoclonal antibody may be used directly from the vial. Bring reagent to 18 – 25°C prior to use.

SELECTED RESEARCH REFERENCES

1. Moretta, A., Bottino, C., Vitale, M., Pende, D., Cantoni, C., Mingari, M.C., Biassoni, R., Moretta, L., "Activating receptors and coreceptors involved in human natural killer cell-mediated cytotoxicity", 2001, *Annu. Rev. Immunol.*, 19, 197-223.
2. Houchins, J.P., Yabe, T., McSherry, C., and Bach, F.H., "DNA sequence analysis of NKG2, a family of related cDNA clones encoding type II integral membrane proteins on human natural killer cells", 1991, *J. Exp. Med.*, 173, 1017-1020.
3. Marsh, S.G.E., Parham, P., Dupont, B., Geraghty, D.E., Trowsdale, J., Middleton, D., Vilches, C., Carrington, M, Witt, C., Guethlein, L.A., Shilling, H., Garcia, C.A., Hsu, K.C., Wain, H., "Killer-cell immunoglobulin-like receptor (KIR) nomenclature report, 2002", 2003, *Immunogenetics*, 55, 220-226.
4. André, P., Biassoni, R., Colonna, M., Cosman, D., Lanier, L.L., Long, O., Lopez-Botet, M., Moretta, A., Moretta, L., Parham, P., Trowsdale, J., Vivier, E., Wagtmann, N., Wilson, M.J., "New nomenclature for MHC receptors", 2001, *Nature Immunol.*, 2, 661.
5. Estefania E., Flores R., Gomez-Lozano N., Aguilar H., Lopez-Botet M., and Vilches C. Human KIR2DL5 Is an Inhibitory Receptor Expressed on the Surface of NK and T Lymphocyte Subsets. *The Journal of Immunology*, 2007, 178: 4402-4410.
6. Gomez-Lozano N., Trompeter H., de Pablo R., Estefania E., Uhrberg M., and Vilches C. Epigenetic silencing of potentially functional KIR2DL5 alleles: Implications for the acquisition of KIR repertoires by NK cells. *Eur. J. Immunol.* 2007. 37: 1954-1965.
7. Yusa S., Catina T., and Campbell K. KIR2DL5 Can Inhibit Human NK Cell Activation Via Recruitment of Src Homology Region 2-Containing Protein Tyrosine Phosphatase-2 (SHP-2). *The Journal of Immunology*, 2004, 172: 7385-7392.

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PN B19716 – 0.5 mL – Liquid – Clone UP-R1

8. Vilches C., Rajalingam R., Uhrberg M., Gardiner C., Young N., and Parham P. KIR2DL5, a Novel Killer-Cell Receptor with a D0-D2 Configuration of Ig-Like Domains. *The Journal of Immunology*, 2000, 164: 5797-5804.

MANUFACTURED BY :
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Printed in France.
Made in France.

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