

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human NKp80/KLRF1 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human (rh) NKp30, rhNKp44, rhNKp46, or recombinant mouse NKp46 is observed.
Source	Monoclonal Rat IgG _{2A} Clone # 239127
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human NKp80/KLRF1 Val66-Tyr231 Accession # Q9NZS2
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Flow Cytometry	0.25-1 µg/10 ⁶ cells	Human whole blood CD56 ⁺ natural killer cells

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. ● 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

NKp80, also known as killer cell lectin-like receptor subfamily F member 1 (KLRF1), is an 80 kDa type II transmembrane, homodimeric, activating co-receptor expressed exclusively on the surface of NK cells. Human NKp80, a member of the C-type lectin family of proteins (1-3), is 231 aa in length with a 38 amino acid (aa) cytoplasmic region, a 21 aa transmembrane region, and a 172 aa extracellular domain (ECD). The ECD contains the C-type lectin-like domain (aa 114-230) and four potential sites of N-linked glycosylation. Multiple splicing variants produce four isoforms for NKp80. Isoform 1 is the standard protein. There are no murine orthologs for NKp80 (4). NKp80 functions as an inhibitory receptor based on the presence of two immunoreceptor tyrosine-based inhibitory motifs (ITIM) in the N-terminal cytoplasmic region and the lack of charged amino acids in the transmembrane region (1). However, later studies show that NKp80 displays an activating function rather than an inhibitory one (2-3, 5). In *in vitro* experiments in human NK cells, NKp80 stimulates NK cell cytotoxicity and induces calcium influx after triggering by appropriate antibodies (2, 3). One study reports that NKp80 likely functions as a co-receptor, cooperating with NKp46 and other activating receptors in NK cell cytotoxicity (2). Activation-induced C-type lectin (AICL) is the ligand for NKp80 (3). It is a myeloid-specific receptor expressed by monocytes, macrophages, and granulocytes (3). Crosslinking of both NKp80 and AICL stimulates secretion of proinflammatory cytokines suggesting that NKp80-AICL interaction is involved in the activating crosstalk between NK cells and myeloid cells, and thus may influence the initiation and maintenance of immune responses in humans (3).

References:

1. Roda-Navarro, P. *et al.* (2000) *Eur. J. Immunol.* **30**:568.
2. Vitale, M. *et al.* (2001) *Eur. J. Immunol.* **31**:233.
3. Welte, S. *et al.* (2006) *Nat. Immunol.* **7**:1334.
4. Yokoyama, W.M. and B.F. Plougastel (2003) *Nat. Rev. Immunol.* **3**:304.
5. Thomas, M. *et al.* (2008) *Proc. Natl. Acad. Sci. U.S.A.* **105**:1656.

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