Human NKp44/NCR2 Antibody

Monoclonal Mouse IgG_{2A} Clone # 253415

Catalog Number: MAB22491

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human NKp44/NCR2 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human (rh) NKp30, rhNKp46, rhNKp80, or recombinant mouse NKp46 is observed.
Source	Monoclonal Mouse IgG_{2A} Clone # 253415
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human NKp44/NCR2 Gln22-Pro190 Accession # CAB52289
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

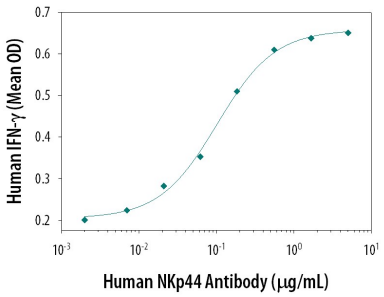
APPLICATIONS

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
Agonist Activity	0.05-0.2 µg/mL	See Below
Flow Cytometry	2.5 µg/10^6 cells	Human $CD56^+$ peripheral blood mononuclear cells treated with Recombinant Human IL-2 (Catalog # 202-IL)

DATA

Agonist Activity



Human NKp44/NCR2 Antibody Induces IFN-γ Secretion in Activated Human NK Cells. Mouse Anti-Human NKp44/NCR2 Monoclonal Antibody (Catalog # MAB22491) induces IFN-γ secretion in human natural killer (NK) cells activated with 500 ng/mL Recombinant Human IL-2 (Catalog # 202-IL), in a dose-dependent manner, as measured using the Quantikine Human IFN-γ ELISA Kit (Catalog # DIF50). The ED_{50} for this effect is typically 0.05-0.2 µg/mL.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

NKp44, along with NKp30 and NKp46, constitute a group of receptors termed "Natural Cytotoxicity Receptors" (NCR) (1). These receptors are expressed almost exclusively by NK cells and play a major role in triggering NK-mediated killing of most tumor cell lines. No rodent ortholog to NKp44 has been identified. Human NKp44, also known as NCR2, is a 44 kDa type I transmembrane glycoprotein that is characterized by the presence of one extracellular V-like immunoglobulin domain (2). It is synthesized as a 276 amino acid (aa) precursor that contains a 21 aa signal sequence, a 171 aa extracellular region, a 21 aa transmembrane segment and a 63 aa cytoplasmic tail. Alternate splicing in both the cytoplasmic tail and extracellular region generates multiple isoforms of unknown significance. The Ig-like region is unaffected. A physical association with the ITAM-bearing accessory protein, DAP12, occurs via a charged residue in the NKp44 transmembrane domain. Ligation of NKp44 with a specific antibody results in phosphorylation of DAP12 (3) and activation of target cell lysis in a redirected killing assay (4). NKp44 is absent from resting NK cells but is upregulated upon activation with IL-2. Activation-induced expression occurs in the $CD56^{dim}$ $CD16^{+}$ NK subset that accounts for more than 85% of NK cells found in peripheral blood and spleen, as well as the $CD56^{bright}$ $CD16^{-}$ NK subset that constitutes the majority of NK cells in lymph node and tonsil (5). Studies with neutralizing antibodies reveal that NKp44 is partially responsible for triggering lytic activity against several tumor cell types (2, 6). Blocking any of the individual NCRs results in partial inhibition of tumor cell lysis, but nearly complete inhibition of lysis is observed if all three receptors are blocked simultaneously (6). NKp44 has also been implicated in recognition of virus-infected cells through its capacity to bind to viral hemagglutinins (7).

References:

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4. Vitale, M. *et al*. (1998) J. Exp. Med. **187**:2065.
5. Ferlazzo, G. *et al*. (2004) J. Immunol. **172**:1455.
6. Pende, D. *et al*. (1999) J. Exp. Med. **190**:1505.
7. Arnon, T. *et al*. (2001) Eur. J. Immunol. **31**:2680.

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