

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human NKG2D/CD314 in Western blots.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 149810
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	BaF3 mouse pro-B cell line transfected with human NKG2D/CD314
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the antibody by the LAL method.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

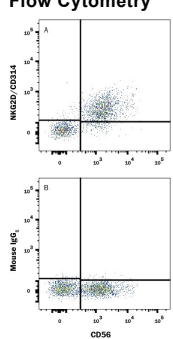
## APPLICATIONS

**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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	1 µg/mL	Recombinant Human NKG2D/CD314 Fc Chimera (Catalog # 1299-NK) under non-reducing conditions only
<b>Flow Cytometry</b>	0.25 µg/10 <sup>6</sup> cells	See Below
<b>CytoF-ready</b>	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
<b>Neutralization</b>	Kwong, K.Y. <i>et al.</i> (2008) <i>J. Mol. Biol.</i> <b>384</b> :1143.	
<b>Costimulation of T Cells</b>	Rincon-Orozco, B. <i>et al.</i> (2005) <i>J. Immunol.</i> <b>175</b> :2144.	

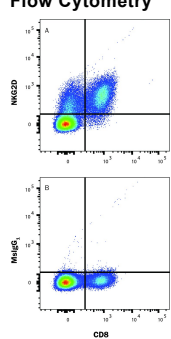
## DATA

**Flow Cytometry**



**Detection of NKG2D/CD314 in Human PBMCs gated on CD3+ cells by Flow Cytometry.** Human peripheral blood mononuclear cells (PBMCs) gated on CD3+ cells were stained with Mouse Anti-Human NCAM-1/CD56 APC-conjugated Monoclonal Antibody (Catalog # FAB2408A) and either (A) Mouse Anti-Human NKG2D/CD314 Monoclonal Antibody (Catalog # MAB139) or (B) Mouse IgG1 Isotype Control (Catalog # MAB002) followed by anti-Mouse IgG PE-conjugated Monoclonal Antibody (Catalog # F0102B). View our protocol for [Staining Membrane-associated Proteins](#).

**Flow Cytometry**



**Detection of NKG2D/CD314 in Human PBMCs by Flow Cytometry.** Human peripheral blood mononuclear cells (PBMCs) were stained with Mouse Anti-Human CD8 APC-conjugated Monoclonal Antibody (Catalog # FAB1509A) and either (A) Mouse Anti-Human NKG2D/CD314 Monoclonal Antibody (Catalog # MAB139) or (B) Mouse IgG1 Isotype Control (Catalog # MAB002) followed by anti-Mouse IgG PE-conjugated Monoclonal Antibody (Catalog # F0102B). Staining was performed using our [Staining Membrane-associated Proteins](#) protocol.

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	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
<b>Stability &amp; Storage</b>	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

NKG2D, also known as CD314, is a type II transmembrane glycoprotein having an extracellular lectin-like domain. This domain lacks the recognizable calcium-binding sites found in true C-type lectins and binds protein rather than carbohydrate ligands. Human NKG2D is expressed on CD8<sup>+</sup> αβ T cells, γδ T cells, NK cells, and NKT cells. In mouse systems NKG2D also occurs on macrophages. Human ligands for NKG2D include MICA, MICB, and ULBP1, 2, and 3. Expression of NKG2D ligands occurs in epithelial cells, tumor cells and under conditions of stress or infection. NKG2D exists as a disulfide-linked homodimer that delivers an activating signal upon ligand binding. Signaling requires association with an adapter protein. Alternative splicing of the NKG2D mRNA results in isoforms with different cytoplasmic domains that can associate either with DAP12 to deliver a true activating signal or with DAP10 resulting in a costimulatory signal. NKG2D has been implicated in anti-tumor surveillance and the immune response against viral infection.

## References:

1. Li, P. *et al.* (2001) *Nature Immunol.* **2**:443.
2. Steinle, A. *et al.* (2001) *Immunogenetics* **53**:279.
3. Cosman, D. *et al.* (2001) *Immunity* **14**:123.
4. Cerwenka, A. and L. Lanier (2001) *Immunol. Rev.* **181**:158.
5. Wu, J. *et al.* (1999) *Science* **285**:730.
6. Diefenbach, A. *et al.* (2002) *Nature Immunol.* **3**:1142.
7. Gilfillan, S. *et al.* (2002) *Nature Immunol.* **3**:1150.
8. Groh, V. *et al.* (2001) *Nature Immunol.* **2**:255.
9. Cerwenka, A. *et al.* (2001) *Proc. Natl. Acad. Sci. USA* **98**:11521.
10. Diefenbach, A. *et al.* (2001) *Nature* **413**:165.
11. NKG2D and its Ligands (2002) [www.RnDSystems.com](http://www.RnDSystems.com).