

## NKG2A-CD94 Heterodimer Protein, Human (HEK293, His-Avi)

Cat. No.:	HY-P77805
Synonyms:	CD159a; NKG2A; NKG2-A; CD94; NKG2A&CD94
Species:	Human
Source:	HEK293
Accession:	P26715 (R100-L233)&Q13241 (S34-I179)
Gene ID:	3821&3824
Molecular Weight:	33-48 kDa

### PROPERTIES

<b>Biological Activity</b>	<ol style="list-style-type: none"> <li>1. Immobilized Human NKG2A&amp;CD94, His Tag at 0.5µg/ml (100µl/well) on the plate. Dose response curve for Anti-NKG2A Antibody, hFc Tag with the EC<sub>50</sub> of 7.9ng/ml determined by ELISA.</li> <li>2. Serial dilutions of Anti-NKG2A Antibody, hFc Tag were added into Human NKG2A&amp;CD94, His Tag : Biotinylated Human HLA-E*01:03 Complex Tetramer, His Tag binding reactions. The half maximal inhibitory concentration (IC<sub>50</sub>) is 31.8ng/ml.</li> </ol>
<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.4. Normally 5% trehalose is added as protectant before lyophilization.
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O.
<b>Storage &amp; Stability</b>	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

<b>Background</b>	<p>NKG2A Protein, an immune inhibitory receptor crucial for self-nonsel self discrimination, forms a complex with KLRD1 on cytotoxic and regulatory lymphocyte subsets, recognizing the non-classical major histocompatibility (MHC) class Ib molecule HLA-E loaded with self-peptides from the signal sequence of classical MHC class Ia molecules. This recognition allows cytotoxic cells to monitor MHC class I expression in healthy cells and promotes self-tolerance. Upon binding to HLA-E-peptide complexes, NKG2A transmits intracellular signals through two immunoreceptor tyrosine-based inhibition motifs (ITIMs), recruiting INPP5D/SHP-1 and INPPL1/SHP-2 tyrosine phosphatases to oppose signals from activating receptors. As a key inhibitory receptor on natural killer (NK) cells, NKG2A regulates their activation and effector functions, countering T cell receptor signaling on a subset of memory/effector CD8-positive T cells and distinguishing harmless from pathogenic antigens. In the HLA-E-rich tumor microenvironment, NKG2A acts as an immune inhibitory checkpoint, contributing to the progressive loss of effector functions in NK cells and tumor-specific T cells, a phenomenon known as cell exhaustion.</p>
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Notably, during viral infection, NKG2A recognizes HLA-E in complex with human cytomegalovirus-derived peptides, inhibiting NK cell cytotoxicity and facilitating viral immune escape.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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