

NKG2A Protein, Mouse (HEK293, His)

Cat. No.:	HY-P74690
Synonyms:	NKG2-A/NKG2-B type II integral membrane protein; CD159a; KLRC1
Species:	Mouse
Source:	HEK293
Accession:	Q9WU31 (A94-I244)
Gene ID:	16641
Molecular Weight:	33-40 kDa

PROPERTIES

AA Sequence	<p>A T P Y N E A N A Q I N S S M T R T H R D I N Y T L S S A Q P C P H C P K E W I</p> <p>S Y S H N C Y F I G M E R K S W N D S L V S C I S K N C S L L H I D S E E E Q D</p> <p>F L Q S L S L V S W T G I L R K G R G Q P W V W K K D S I F K P K I A E I L H D</p> <p>E C N C A M M S A S G L T A D S C T T L H P Y L C K C K F P I</p>
Biological Activity	Measured by its binding ability in a functional ELISA. When Recombinant Mouse NKG2A is immobilized at 0.5 µg/mL (100 µL/well) can bind Biotinylated Recombinant human CD94 Protein. The ED ₅₀ for this effect is 0.5737 µg/mL
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	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.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	NKG2A, an immune inhibitory receptor crucial for self-nonself 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),
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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. Notably, during viral infection, NKG2A recognizes HLA-E in complex with human cytomegalovirus-derived peptides, inhibiting NK cell cytotoxicity and facilitating viral immune escape^{[1][2][3][4]}.

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

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