

NKG2A Protein, Cynomolgus/Rhesus Macaque (HEK293, Fc)

Cat. No.:	HY-P77105
Synonyms:	NKG2-A/NKG2-B type II integral membrane protein; CD159a; KLRC1
Species:	Rhesus Macaque
Source:	HEK293
Accession:	Q9MZJ2 (P94-L233)
Gene ID:	/
Molecular Weight:	Approximately 50-55 kDa due to the glycosylation

PROPERTIES

AA Sequence	<p>P S T L T Q K H N N S S L N T R T Q K A C H C G H C P E E W I T Y S N S C Y Y I</p> <p>G K E K R T W A E S L L A C T L K N S S L L S I D N E E E M K F L T A I S P S T</p> <p>W T G V F R D S S Q H P W V T I N G L T F K H E I K D S D N A E H N C A M L H A</p> <p>R G L K S D R C G S S K I Y H C K H K L</p>
Biological Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human CD94 is present at 2 µg/mL, can bind Recombinant Cynomolgus NKG2A. The ED ₅₀ for this effect is 4.181 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 Protein, 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
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(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. Notably, during viral infection, NKG2A recognizes HLA-E in complex with human cytomegalovirus-derived peptides, inhibiting NK cell cytotoxicity and facilitating viral immune escape.

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

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