NKG2A-CD94 Heterodimer Protein, Human (HEK293, His-Flag)

Cat. No.:	HY-P70713
Synonyms:	NKG2A& CD94 Heterodimer; KLRC1& CD94 Heterodimer; CD159A& KLRD1 Heterodimer
Species:	Human
Source:	HEK293
Accession:	P26715 (R100-L233)&Q13241 (S34-I179)
Gene ID:	3821&3824
Molecular Weight:	25-40 kDa

PROPERTIES

AA Sequence	R H N N S S L N T R T Q K A R H C G H C P E E W I T Y S N S C Y Y I G K E R R T W E E S L L A C T S K N S S L L S I D N E E E M K F L S I I S P S S W I G V F R N S S H H P W V T M N G L A F K H E I K D S D N A E L N C A V L Q V N R L K S A Q C G S S I I Y H C K H K L & : S F T K L S I E P A F T P G P N I E L Q K D S D C C S C Q E K W V G Y R C N C Y F I S S E Q K T W N E S R H L C A S Q K S S L L Q L Q N T D E L D F M S S S Q Q F Y W I G L S Y S E E H T A W L W E N G S A L S Q Y L F P S F E T F N T K N C I A Y N P N G N A L D E S C E D K N R Y I C K Q Q L I
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.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. 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 (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.

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