

HLA-E Protein, Human, Recombinant (His & SUMO)

General Information

Synonyms:	HLA-6.2;HLA class I histocompatibility antigen, alpha chain E;alpha chain E;HLAE;HLA-E;MHC class I antigen E
Protein Construction:	22-305 aa
Species:	Human
Expression Host:	E. coli
Accession:	P13747
Molecular Weight:	48.7 kDa (predicted)
AA Sequence:	GSHSLKYFHTSVSRPGRGEPFISVGVYDDTQFVRFDNDAAASPRMVPRAPWMEQEGSEYWDRETRSARDTA QIFRVNLRTRLRGYYNQSEAGSHTLQWMHGCELGPD RRFLRGYEQFAYDGKDYLT LNEDLRSWTAVDTAAQI SEQKSNDA SEAEHQRAYLEDTCVEWLHKYLEKGKETLLHLEPPKTHVTHHPISDHEATLRCWALGFYPAEITL TWQQDGE GHTQDTEL VETRPAGDGT FQKWA AVVVP SGEEQRYTCHVQHEGLPEPVTLRWK PASQPTIPI

QC Testing

Biological Activity:	Activity has not been tested. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 90% as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Tris-based buffer, 50% glycerol

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Non-classical major histocompatibility class Ib molecule involved in immune self-nonsel self discrimination. In complex with B2M/beta-2-microglobulin binds nonamer self-peptides derived from the signal sequence of classical MHC class Ia molecules (VL9 peptides). Peptide-bound HLA-E-B2M heterotrimeric complex primarily

functions as a ligand for natural killer (NK) cell inhibitory receptor KLRD1-KLRC1, enabling NK cells to monitor the expression of other MHC class I molecules in healthy cells and to tolerate self. Upon cellular stress, preferentially binds signal sequence-derived peptides from stress-induced chaperones and is no longer recognized by NK cell inhibitory receptor KLRD1-KLRC1, resulting in impaired protection from NK cells. Binds signal sequence-derived peptides from non-classical MHC class Ib HLA-G molecules and acts as a ligand for NK cell activating receptor KLRD1-KLRC2, likely playing a role in the generation and effector functions of adaptive NK cells and in maternal-fetal tolerance during pregnancy. Besides self-peptides, can also bind and present pathogen-derived peptides conformationally similar to VL9 peptides to alpha-beta T cell receptor (TCR) on unconventional CD8+ cytotoxic T cells, ultimately triggering antimicrobial immune response.; (Microbial infection) Viruses like human cytomegalovirus have evolved an escape mechanism whereby virus-induced down-regulation of host MHC class I molecules is coupled to the binding of viral peptides to HLA-E, restoring HLA-E expression and inducing HLA-E-dependent NK cell immune tolerance to infected cells.; (Microbial infection) May bind HIV-1 gag/Capsid protein p24-derived peptide (AISPRTLNA) on infected cells and may inhibit NK cell cytotoxicity, a mechanism that allows HIV-1 to escape immune recognition.; (Microbial infection) Upon SARS-CoV-2 infection, may contribute to functional exhaustion of cytotoxic NK cells and CD8-positive T cells. Binds SARS-CoV-2 S/Spike protein S1-derived peptide (LQPRTFLL) expressed on the surface of lung epithelial cells, inducing NK cell exhaustion and dampening antiviral immune surveillance.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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