

HLA-A Protein, Human (His)

Cat. No.:	HY-P72288
Synonyms:	HLA class I histocompatibility antigen,A-1 alpha chain
Species:	Human
Source:	E. coli
Accession:	P30443 (G25-I308)
Gene ID:	3105
Molecular Weight:	Approximately 36.7 kDa

PROPERTIES

AA Sequence	<p> G S H S M R Y F F T S V S R P G R G E P R F I A V G Y V D D T Q F V R F D S D A A S Q K M E P R A P W I E Q E G P E Y W D Q E T R N M K A H S Q T D R A N L G T L R G Y Y N Q S E D G S H T I Q I M Y G C D V G P D G R F L R G Y R Q D A Y D G K D Y I A L N E D L R S W T A A D M A A Q I T K R K W E A V H A A E Q R R V Y L E G R C V D G L R R Y L E N G K E T L Q R T D P P K T H M T H H P I S D H E A T L R C W A L G F Y P A E I T L T W Q R D G E D Q T Q D T E L V E T R P A G D G T F Q K W A A V V V P S G E E Q R Y T C H V Q H E G L P K P L T L R W E L S S Q P T I P I </p>
Appearance	Lyophilized powder.
Formulation	Lyophilized from 0.22 µm filtered solution in 10 mM Tris-HCl, 1 mM EDTA, 6% Trehalose, pH 8.0.
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.
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	<p>HLA-C*0304, an antigen-presenting major histocompatibility complex class I (MHCI) molecule, plays a crucial role in both reproduction and antiviral immunity. In collaboration with B2M/beta 2 microglobulin, it exhibits a limited repertoire of self and viral peptides, serving as a prominent ligand for both inhibitory and activating killer immunoglobulin receptors (KIRs) expressed on natural killer (NK) cells. Particularly in the context of pregnancy, HLA-C*0304 mediates the interaction between extravillous trophoblasts and uterine NK cells through KIR, thereby regulating trophoblast invasion essential for</p>
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placentation and overall fetal growth. During viral infections, it presents viral peptides with low affinity for KIRs, preventing KIR-mediated inhibition and promoting the lysis of infected cells. Furthermore, HLA-C*0304 displays a restricted repertoire of viral peptides on antigen-presenting cells, facilitating recognition by alpha-beta T cell receptors on CD8-positive T cells, thereby guiding antigen-specific T cell immune responses to eliminate infected cells, especially in chronic viral infection scenarios such as HIV-1 or CMV infection. The peptide and the MHC molecule jointly contribute to antigen recognition, with the peptide determining fine specificity, and MHC residues dictating T cell receptor restriction. Typically presenting intracellular peptide antigens of 9 amino acids originating from cytosolic proteolysis via the proteasome, HLA-C*0304 exhibits binding preferences for peptides with specific anchor residues at positions 2 and 9, mainly comprising hydrophobic or aromatic amino acids (Phe, Ile, Leu, Met, Val, and Tyr).

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

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