HLA-G Protein, Human (C66S, His-Avi)

Cat. No.:	HY-P78455
Synonyms:	HLA G antigen; sHLA-G; b2 microglobulin; HLA G; HLAG; HLA-G; MHC Class I Antigen G; MHC class Ib antigen; MHC-G; sHLA-G
Species:	Human
Source:	E. coli
Accession:	P17693 (G25-T305, C66S)
Gene ID:	3135
Molecular Weight:	36-42 kDa

PROPERTIES

Biological Activity	Immobilized Human HLA-G Free Heavy Chain, His Tag at 2 μg/mL (100 μl/Well) on the. Dose response curve for Anti-HLA-G Antibody, hFc Tag with the EC_{50} of 25.9 ng/mL determined by ELISA.
Appearance	Solution
Formulation	Supplied as a 0.2 μm filtered solution of 20 mM Tris,500 mM NaCl, 20% Glycerol, pH 8.0.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	N/A.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice

DESCRIPTION

Background	HLA-G, a non-classical major histocompatibility class Ib molecule, plays a crucial role in immune regulation at the maternal-fetal interface. In association with B2M/beta-2 microglobulin, it forms a complex that selectively binds a limited repertoire of nonamer self-peptides derived from intracellular proteins, including histones and ribosomal proteins. This peptide-bound HLA-G-B2M complex acts as a ligand for inhibitory/activating KIR2DL4, LILRB1, and LILRB2 receptors on uterine immune cells, fostering fetal development while maintaining maternal-fetal tolerance. Interactions with KIR2DL4 and LILRB1 receptors trigger NK cell senescence-associated secretory phenotype, promoting vascular remodeling and fetal growth during early pregnancy. Moreover, HLA-G's engagement with LILRB2 induces the differentiation of type 1 regulatory T cells and myeloid-derived suppressor cells, actively contributing to the maintenance of maternal-fetal tolerance. Additionally, HLA-G may play a role in balancing tolerance and antiviral immunity by modulating the effector functions of NK cells, CD8+ T cells, and B cells. Furthermore, it negatively regulates NK cell- and CD8+ T cell-mediated cytotoxicity, highlighting its multifaceted role in immune regulation at the maternal-fetal interface.

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

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