

PE-Labeled HLA-G Complex Tetramer Protein, Human (HEK293, His-Avi)

Cat. No.:	HY-P701002
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:	HEK293
Accession:	P17693 (G25-T305)&P61769 (I21-M119)&RIIPRHLQL
Gene ID:	3135&567
Molecular Weight:	260-265 kDa under Non reducing (N) condi

PROPERTIES

Biological Activity	Immobilized PE-Labeled Human HLA-G&B2M&Peptide (RIIPRHLQL) Tetramer, His Tag at 0.5 µg/mL (100 µl/well) on the plate. Dose response curve for Anti-HLA-G Antibody, hFc Tag with the EC ₅₀ of ≤9.2 ng/mL determined by ELISA.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, 0.2% BSA, pH 7.4. Normally 8% trehalose is added as protectant before lyophilization.
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	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.
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Caution: Product has not been fully validated for medical applications. For research use only.

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