

## HLA-G Complex Protein, Human (Biotinylated, HEK293, His-Avi)

<b>Cat. No.:</b>	HY-P77689
<b>Synonyms:</b>	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
<b>Species:</b>	Human
<b>Source:</b>	HEK293
<b>Accession:</b>	P17693 (G25-T305)&P61769 (I21-M119)&RIIPRHLQL
<b>Gene ID:</b>	3135&567
<b>Molecular Weight:</b>	51-60 kDa

### PROPERTIES

<b>Appearance</b>	Solution.
<b>Formulation</b>	Supplied as a 0.22 µm filtered solution of PBS, pH 7.4.
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	N/A.
<b>Storage &amp; Stability</b>	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.
<b>Shipping</b>	Shipping with dry ice.

### DESCRIPTION

<b>Background</b>	<p>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.</p>
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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