

## HLA-G Protein, Human (His-SUMO)

<b>Cat. No.:</b>	HY-P72227
<b>Synonyms:</b>	B2 microglobulin; DADB-15K14.8; HLA 6.0; HLA class I histocompatibility antigen alpha chain G; HLA class I histocompatibility antigen; alpha chain G; HLA class I molecule; HLA G; HLA G antigen; HLA G histocompatibility antigen class I G; HLA G3; HLA-G; HLA-G histocompatibility antigen; class I; HLA60; HLAG; HLAG_HUMAN; Major histocompatibility complex class I G; MHC class I antigen; MHC class I antigen G; MHC G; T-cell A locus; TCA
<b>Species:</b>	Human
<b>Source:</b>	E. coli
<b>Accession:</b>	P17693 (G25-D338)
<b>Gene ID:</b>	3135
<b>Molecular Weight:</b>	Approximately 51.6 kDa

### PROPERTIES

<b>AA Sequence</b>	<pre> G S H S M R Y F S A   A V S R P G R G E P   R F I A M G Y V D D   T Q F V R F D S D S A C P R M E P R A P   W V E Q E G P E Y W   E E E T R N T K A H   A Q T D R M N L Q T L R G Y Y N Q S E A   S S H T L Q W M I G   C D L G S D G R L L   R G Y E Q Y A Y D G K D Y L A L N E D L   R S W T A A D T A A   Q I S K R K C E A A   N V A E Q R R A Y L E G T C V E W L H R   Y L E N G K E M L Q   R A D P P K T H V T   H H P V F D Y E A T L R C W A L G F Y P   A E I I L T W Q R D   G E D Q T Q D V 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 E P L   M L R W K Q S S L P T I P I M G I V A G   L V V L A A V V T G   A A V A A V L W R K   K S S D           </pre>
<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a 0.2 µm solution of Tris-based buffer, 50% Glycerol.
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O.
<b>Storage &amp; Stability</b>	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.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

<b>Background</b>	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
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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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