SANTA CRUZ BIOTECHNOLOGY, INC.

HLA-G (4H84): sc-21799

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Major histocompatibility complex (MHC, human leukocyte antigen (HLA) molecules are cell-surface receptors that bind foreign peptides and present them to T lymphocytes. MHC class I molecules consist of two polypeptide chains, an α or heavy chain, and a non-covalently associated protein, β-2-Microglobulin. Cytotoxic T lymphocytes bind antigenic peptides presented by MHC class I molecules. Antigens that bind to MHC class I molecules are typically 8-10 residues in length and are stabilized in a peptide binding groove. MHC class II molecules are encoded by polymorphic MHC genes and consist of a non-covalent complex of an α and β chain. Helper T lymphocytes bind antigenic peptides presented by MHC class II molecules. MHC class II molecules bind 13-18 amino acid antigenic peptides. Accumulating in endosomal/lysosomal compartments and on the surface of B cells, HLA-DM and -DO molecules regulate binding of exogenous peptides to class II molecules (HLA-DR) by sustaining a conformation that favors peptide exchange. The differential structural properties of MHC class I and class II molecules account for their respective roles in activating different populations of T lymphocytes.

CHROMOSOMAL LOCATION

Genetic locus: HLA-G (human) mapping to 6p22.1; H2-K1 (mouse) mapping to 17 B1.

SOURCE

HLA-G (4H84) is a mouse monoclonal antibody raised against amino acids 61-83 of HLA-G of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HLA-G (4H84) is available conjugated to agarose (sc-21799 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-21799 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-21799 PE), fluorescein (sc-21799 FITC), Alexa Fluor® 488 (sc-21799 AF488), Alexa Fluor® 546 (sc-21799 AF546), Alexa Fluor® 594 (sc-21799 AF594) or Alexa Fluor® 647 (sc-21799 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-21799 AF680) or Alexa Fluor® 790 (sc-21799 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

HLA-G (4H84) is recommended for detection of HLA-G isoforms of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for HLA-G siRNA (h): sc-42920, HLA-G siRNA (m): sc-42921, HLA-G shRNA Plasmid (h): sc-42920-SH, HLA-G shRNA Plasmid (m): sc-42921-SH, HLA-G shRNA (h) Lentiviral Particles: sc-42920-V and HLA-G shRNA (m) Lentiviral Particles: sc-42921-V.

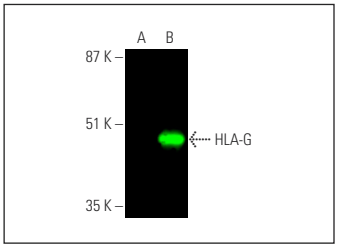
Molecular Weight of HLA-G: 39 kDa.

Positive Controls: HLA-G (h2): 293T Lysate: sc-159524.

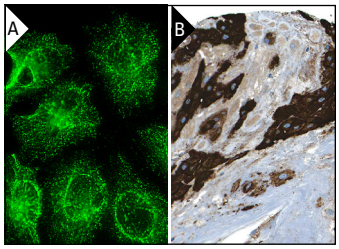
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



HLA-G (4H84): sc-21799. Near-infrared western blot analysis of HLA-G expression in non-transfected: sc-117752 (**A**) and human HLA-G transfected: sc-159524 (**B**) 293T whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



HLA-G (4H84): sc-21799. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of decidual cells magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Adithi, M., et al. 2006. Retinoblastoma: expression of HLA-G. Ocul. Immunol. Inflamm. 14: 207-213.
2. Eskicioglu, F., et al. 2016. The association of HLA-G and immune markers in recurrent miscarriages. J. Matern. Fetal Neonatal Med. 29: 3056-3060.
3. Kirana, C., et al. 2017. Soluble HLA-G is a differential prognostic marker in sequential colorectal cancer disease stages. Int. J. Cancer 140: 2577-2586.
4. Roberts, R.M., et al. 2018. Specification of trophoblast from embryonic stem cells exposed to BMP4. Biol. Reprod. 99: 212-224.
5. Jeyarajah, M.J., et al. 2019. Syndecan-4 regulates extravillous trophoblast migration by coordinating protein kinase C activation. Sci. Rep. 9: 10175.
6. Sakellariou, C., et al. 2020. Prostate cancer cells enhance interleukin-15-mediated expansion of NK cells. BJU Int. 125: 89-102.
7. Marletta, S., et al. 2021. HLA-G expression in melanomas. Int. Rev. Immunol. 40: 330-343.
8. Jeyarajah, M.J., et al. 2022. The multifaceted role of GCM1 during trophoblast differentiation in the human placenta. Proc. Natl. Acad. Sci. USA 119: e2203071119.
9. Vondra, S., et al. 2023. The human placenta shapes the phenotype of decidual macrophages. Cell Rep. 42: 111977.
10. Kim, M., et al. 2024. The transcriptional regulatory network modulating human trophoblast stem cells to extravillous trophoblast differentiation. Nat. Commun. 15: 1285.

RESEARCH USE

For research use only, not for use in diagnostic procedures.