SANTA CRUZ BIOTECHNOLOGY, INC.

ULBP2 (6F6): sc-53135

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The Power to Question

BACKGROUND

Cytomegalovirus UL16 binding proteins, known as ULBPs, are GPI-linked glycoproteins that belong to the extended MHC class I family. ULBP proteins are ligands for the activating receptor, NKG2D/DAP10, which causes lymphocyte activation, resulting in the secretion of cytokines, such as interferon-γ and tumor cell lysis. ULBPs stimulate cytokine and chemokine production from NK cells, CD8 α/β T cells, and γ/δ T cells. UL16, binds to three of the five known ligands for human NKG2D. UL16 is retained in the endoplasmic reticulum and *cis*-Golgi apparatus of cells and causes MICB to be similarly retained and stabilized within cells. Coexpression of UL16 markedly reduces cell surface levels of MICB, ULBP1, and ULBP2, and decreases susceptibility to natural killer cell-mediated cytotoxicity.

REFERENCES

1. Dunn, C., et al. 2003. Human cytomegalovirus glycoprotein UL16 causes intracellular sequestration of NKG2D ligands, protecting against natural killer cell cytotoxicity. J. Exp. Med. 197: 1427-1439.
2. Rolle, A., et al. 2003. Effects of human cytomegalovirus infection on ligands for the activating NKG2D receptor of NK cells: up-regulation of UL16-binding protein (ULBP)1 and ULBP2 is counteracted by the viral UL16 protein. J. Immunol. 171: 902-908.
3. Maccalli, C., et al. 2003. NKG2D engagement of colorectal cancer-specific T cells strengthens TCR-mediated antigen stimulation and elicits TCR independent anti-tumor activity. Eur. J. Immunol. 33: 2033-2043.
4. Poggi, A., et al. 2004. Vδ1 T lymphocytes from B-CLL patients recognize ULBP3 expressed on leukemic B cells and up-regulated by *trans*-retinoic acid. Cancer Res. 64: 9172-9179.
5. Nowbakht, P., et al. 2005. Ligands for natural killer cell activating receptors are expressed upon maturation of normal myelomonocytic cells but are low in acute myeloid leukemias. Blood 105: 3615-3622.
6. SWISS-PROT/TrEMBL (Q9BZM5). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html

CHROMOSOMAL LOCATION

Genetic locus: ULBP2 (human) mapping to 6q25.1.

SOURCE

ULBP2 (6F6) is a mouse monoclonal antibody raised against purified ULBP2 of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available azide-free for blocking, sc-53135 L, 200 µg/0.1 ml.

STORAGE

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

APPLICATIONS

ULBP2 (6F6) is recommended for detection of ULBP2 of human origin by immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

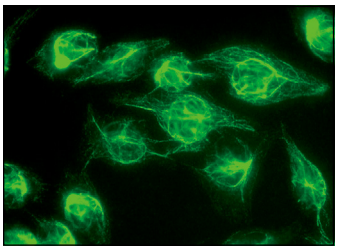
Suitable for use as control antibody for ULBP2 siRNA (h): sc-44564, ULBP2 shRNA Plasmid (h): sc-44564-SH and ULBP2 shRNA (h) Lentiviral Particles: sc-44564-V.

Molecular Weight ULBP2: 37 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



ULBP2 (6F6): sc-53135. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Kamimura, H., et al. 2012. Reduced NKG2D ligand expression in hepatocellular carcinoma correlates with early recurrence. J. Hepatol. 56: 381-388.
2. Luo, D., et al. 2019. MG132 selectively upregulates MICB through the DNA damage response pathway in A549 cells. Mol. Med. Rep. 19: 213-220.
3. Shen, J.Z., et al. 2020. FBXO44 promotes DNA replication-coupled repetitive element silencing in cancer cells. Cell 184: 352-369.e23.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.