SANTA CRUZ BIOTECHNOLOGY, INC.

# ULBP3 (2F9): sc-53132

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*The Power to Question*

## BACKGROUND

The immune system contains genetically encoded subsystems which monitor the extracellular environment in order to eliminate pathogens and resolve abnormal or transformed tissues. Cytomegalovirus UL16 binding proteins, known as ULBPs, are GPI-linked glycoproteins that belong to the extended MHC class I family and are distantly related to MHC class I polypeptide-related sequence B, known as MICB. ULBP and MICB 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. The interaction of ULBP or MICB with NKG2D/DAP10 can be blocked by the soluble form of UL16. ULBPs stimulate cytokine and chemokine production from NK cells, CD8 α/β T cells and γ/δ T cells. Soluble forms of ULBPs induce protein tyrosine phosphorylation and activation of the Janus kinase 2, Stat5, extracellular signal-regulated kinase, mitogen-activated protein kinase and phosphatidylinositol 3-kinase (PI 3-kinase)/Akt signal transduction pathways.

## REFERENCES


1. Kubin, M., et al. 2001. ULBP1, 2, 3: novel MHC class I-related molecules that bind to human cytomegalovirus glycoprotein UL16, activate NK cells. Eur. J. Immunol. 31: 1428-1437.
2. Cosman, D., et al. 2001. ULBPs, novel MHC class I-related molecules, bind to CMV glycoprotein UL16 and stimulate NK cytotoxicity through the NKG2D receptor. Immunity 14: 123-133.


## CHROMOSOMAL LOCATION

Genetic locus: ULBP3 (human) mapping to 6q25.1.

## SOURCE

ULBP3 (2F9) is a mouse monoclonal antibody raised against purified ULBP3 of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_{2a}$ 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-53132 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

ULBP3 (2F9) is recommended for detection of ULBP3 of human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x $10^6$ cells).

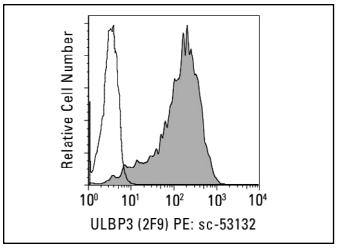
Suitable for use as control antibody for ULBP3 siRNA (h): sc-43006, ULBP3 shRNA Plasmid (h): sc-43006-SH and ULBP3 shRNA (h) Lentiviral Particles: sc-43006-V.

Molecular Weight of ULBP3: 28 kDa.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) 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




ULBP3 (2F9): sc-53132. Indirect FCM analysis of C1R mock (black line histogram) and C1R-ULBP3 transfectants (solid histogram) stained with ULBP3 (2F9) followed by PE-conjugated goat anti-mouse IgG. Kindly provided by Nobuyoshi Hanaoka and Veronika Groh at Fred Hutchinson Cancer Research Center.

## SELECT PRODUCT CITATIONS


1. Petukhova, L., et al. 2010. Genome-wide association study in alopecia areata implicates both innate and adaptive immunity. Nature 466: 113-117.
2. Bedel, R., et al. 2011. Novel role for Stat3 in transcriptional regulation of NK immune cell targeting receptor MICA on cancer cells. Cancer Res. 71: 1615-1626.
3. Kamimura, H., et al. 2012. Reduced NKG2D ligand expression in hepatocellular carcinoma correlates with early recurrence. J. Hepatol. 56: 381-388.
4. Pfeiffer, M.M., et al. 2013. Influence of histone deacetylase inhibitors and DNA-methyltransferase inhibitors on the NK cell-mediated lysis of pediatric B-lineage leukemia. Front. Oncol. 3: 99.
5. Song, D.G., et al. 2013. Chimeric NKG2D CAR-expressing T cell-mediated attack of human ovarian cancer is enhanced by histone deacetylase inhibition. Hum. Gene Ther. 24: 295-305.
6. Schlegel, P., et al. 2015. NKG2D signaling leads to NK cell mediated lysis of childhood AML. J. Immunol. Res. 2015: 473175.
7. Yao, C., et al. 2018. Rocaglamide enhances NK cell-mediated killing of non-small cell lung cancer cells by inhibiting autophagy. Autophagy 14: 1831-1844.
8. Luo, D., et al. 2019. MG132 selectively upregulates MICB through the DNA damage response pathway in A549 cells. Mol. Med. Rep. 19: 213-220.
9. Ng, W., et al. 2021. Targeting CD155 by rediocide-A overcomes tumour immuno-resistance to natural killer cells. Pharm. Biol. 59: 47-53.


## RESEARCH USE

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