

ULBP1 (H-46): sc-33564

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.
3. Sutherland, C.L., et al. 2002. UL16-binding proteins, novel MHC class I-related proteins, bind to NKG2D and activate multiple signaling pathways in primary NK cells. *J. Immunol.* 168: 671-679.
4. Rölle, 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.

CHROMOSOMAL LOCATION

Genetic locus: ULBP1 (human) mapping to 6q25.1.

SOURCE

ULBP1 (H-46) is a rabbit polyclonal antibody raised against amino acids 171-216 mapping near the C-terminus of ULBP1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

RESEARCH USE

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

APPLICATIONS

ULBP1 (H-46) is recommended for detection of ULBP1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ULBP1 siRNA (h): sc-43005, ULBP1 shRNA Plasmid (h): sc-43005-SH and ULBP1 shRNA (h) Lentiviral Particles: sc-43005-V.

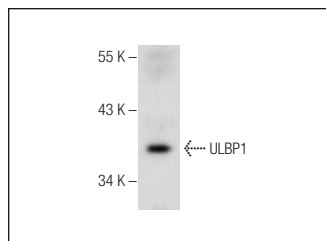
Molecular Weight of ULBP1: 30-35 kDa.

Positive Controls: human liver extract: sc-363766 or Hep G2 cell lysate: sc-2227.

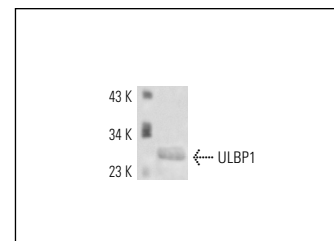
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



ULBP1 (H-46): sc-33564. Western blot analysis of ULBP1 expression in human liver tissue extract.



ULBP1 (H-46): sc-33564. Western blot analysis of ULBP1 expression in Hep G2 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Hedlund, M., et al. 2011. Thermal- and oxidative stress causes enhanced release of NKG2D ligand-bearing immunosuppressive exosomes in leukemia/lymphoma T and B cells. *PLoS ONE* 6: e16899.



Try **ULBP1 (3F1): sc-53131**, our highly recommended monoclonal alternative to ULBP1 (H-46).