SANTA CRUZ BIOTECHNOLOGY, INC.

ULBP4 (C-11): sc-390784

SANTA CRUZ BIOTECHNOLOGY

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.
3. Steinle, A., et al. 2001. Interactions of human NKG2D with its ligands MICA, MICB, and homologs of the mouse RAE-1 protein family. Immunogenetics 53: 279-287.
4. 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.
5. LocusLink Report (LocusID: 4277). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: RAET1E (human) mapping to 6q25.1.

SOURCE

ULBP4 (C-11) is a mouse monoclonal antibody raised against amino acids 40-118 mapping within an internal region of ULBP4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain 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

ULBP4 (C-11) is recommended for detection of ULBP4 of human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (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 ULBP4 siRNA (h): sc-63183, ULBP4 shRNA Plasmid (h): sc-63183-SH and ULBP4 shRNA (h) Lentiviral Particles: sc-63183-V.

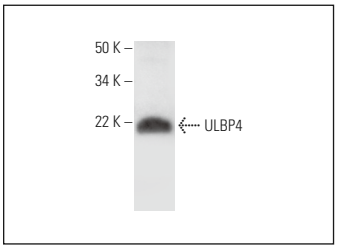
Molecular Weight of ULBP4: 30 kDa.

Positive Controls: human skin extract: sc-363777.

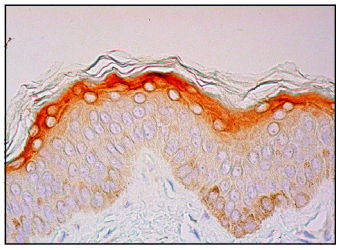
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



ULBP4 (C-11): sc-390784. Western blot analysis of ULBP4 expression in human skin tissue extract.



ULBP4 (C-11): sc-390784. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of keratinocytes.

SELECT PRODUCT CITATIONS

1. Chen, D., et al. 2023. A signature based on NKG2D ligands to predict the recurrence of hepatocellular carcinoma after radical resection. Cancer Med. 12: 6337-6347.

PROTOCOLS

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