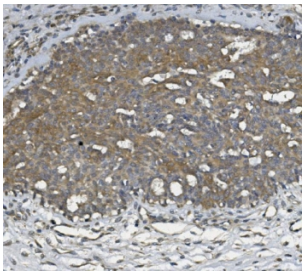
ULBP1 Antibody (RQ5778)

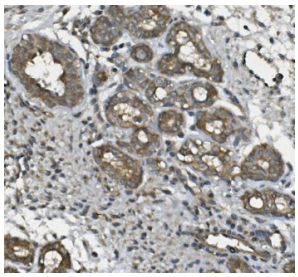
Catalog No.	Formulation	Size
RQ5778	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

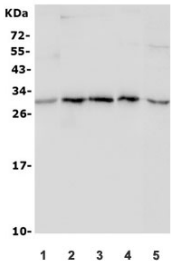
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
UniProt	Q9BZM6
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry: 1-2ug/ml Flow cytometry: 1-3ug/million cells Direct ELISA: 0.1-0.5ug/ml
Limitations	This ULBP1 antibody is available for research use only.



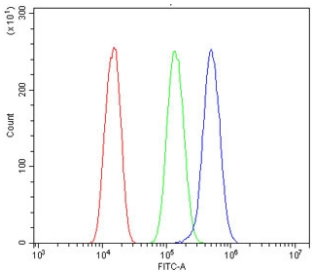
ULBP1 Polyclonal Antibody IHC Analysis of Human Breast Cancer Tissue. Immunohistochemical analysis of formalin-fixed, paraffin-embedded human breast cancer tissue using UL16-Binding Protein 1 Antibody. Brown DAB staining is observed throughout substantial portions of the malignant epithelial tissue, with heterogeneous cytoplasmic and peripheral cellular immunoreactivity. Surrounding stromal regions exhibit comparatively limited staining. Heat-induced epitope retrieval (HIER) was performed by boiling tissue sections in EDTA buffer (pH 8.0) for 20 minutes, followed by cooling before antibody incubation.



ULBP1 Polyclonal Antibody IHC Analysis of Human Breast Cancer Glandular Structures. Immunohistochemical analysis of formalin-fixed, paraffin-embedded human breast cancer tissue using UL16-Binding Protein 1 Antibody. Brown DAB staining is visible in malignant epithelial cells forming glandular and duct-like structures, with prominent cytoplasmic and peripheral cellular immunoreactivity. Staining intensity varies among the epithelial structures, while portions of the surrounding stromal tissue show weaker staining. Heat-induced epitope retrieval (HIER) was performed using EDTA buffer (pH 8.0) at boiling temperature for 20 minutes, followed by cooling before antibody incubation.



ULBP1 Polyclonal Antibody WB Analysis of Rat Lung, Mouse Brain, Mouse Heart, Mouse Lung and Human HepG2 Cells. Western blot analysis of rat lung (lane 1), mouse brain (lane 2), mouse heart (lane 3), mouse lung (lane 4), and human HepG2 cell lysates (lane 5) using UL16-Binding Protein 1 Antibody. Immunoreactive bands are detected at approximately 29-30 kDa, compared with the predicted molecular weight of 28 kDa. Post-translational glycosylation of ULBP1 may contribute to its slightly higher apparent molecular weight relative to the predicted value.



ULBP1 Polyclonal Antibody FACS Staining of Human PC-3 Cells. Flow cytometry analysis of human PC-3 cells using UL16-Binding Protein 1 Antibody at 1 ug per million cells following blocking with goat serum. The histogram compares cells alone (red), isotype control (green), and ULBP1 antibody-stained cells (blue). The antibody-stained population exhibits a clear rightward fluorescence shift relative to the isotype control, indicating increased antibody-associated fluorescence in the PC-3 cell population.

Description

ULBP1 Polyclonal Antibody / UL16-Binding Protein 1 Antibody recognizes ULBP1, a cell surface glycoprotein belonging to the UL16-binding protein family of immune recognition molecules. ULBP1 functions as a ligand for NKG2D, an activating receptor expressed by natural killer cells and certain populations of T lymphocytes. Through this interaction, ULBP1 contributes to immune recognition of cells experiencing physiological stress, infection, or malignant transformation. Its expression and availability at the cell surface are important determinants of NKG2D-dependent immune responses.

ULBP1 belongs to a group of structurally related proteins that resemble major histocompatibility complex class I molecules but differ in several important features. Unlike conventional MHC class I proteins, ULBP1 does not associate with beta-2 microglobulin or present peptide antigens. Instead, it contains extracellular alpha-1 and alpha-2 domains that participate in receptor recognition. The mature protein is attached to the plasma membrane through a glycosylphosphatidylinositol anchor, allowing its extracellular domain to interact with immune receptors.

Expression of ULBP1 can increase in response to cellular stress pathways associated with DNA damage, abnormal proliferation, and oncogenic signaling. When displayed on the surface of susceptible cells, ULBP1 engages NKG2D and contributes to activating signals that promote immune surveillance. In natural killer cells, NKG2D associates with the signaling adaptor DAP10, which recruits downstream signaling proteins involved in cytotoxic responses. The resulting activation can support the recognition and elimination of stressed or transformed cells.

ULBP1 also participates in the complex relationship between tumor cells and the immune system. Increased expression of NKG2D ligands can enhance tumor cell recognition, but malignant cells may develop mechanisms that reduce their susceptibility to immune attack. These mechanisms include altered ligand expression, changes in cell surface availability, and the release of soluble ligand forms. Such processes can influence NKG2D signaling and contribute to immune

evasion in particular tumor environments.

The name ULBP1 reflects its interaction with the UL16 glycoprotein encoded by cytomegalovirus. Viral interference with NKG2D ligand trafficking represents one mechanism through which infected cells can evade immune detection. ULBP1 Polyclonal Antibody provides a reagent for investigating this immune recognition molecule in studies of cellular stress responses, natural killer cell activation, tumor immunology, and the regulation of NKG2D-dependent immune surveillance.

Explore our Immunology Antibodies for additional targets involved in natural killer cell activation, NKG2D receptor signaling, tumor immune surveillance, and the recognition of stressed or transformed cells.

Application Notes

Optimal dilution of the ULBP1 antibody should be determined by the researcher.

Immunogen

Recombinant human protein (amino acids W27-K209) was used as the immunogen for the ULBP1 antibody.

Storage

After reconstitution, the ULBP1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

UL16-binding protein 1 antibody, NKG2D ligand 1 antibody, NKG2D ligand ULBP1 antibody, Retinoic acid early transcript 1I antibody, RAET1I antibody, ULBP1 cell surface glycoprotein antibody

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