Human ULBP-4/RAET1E
Alexa Fluor® 594-conjugated Antibody

Monoclonal Mouse IgG_{2B} Clone # 709116

Catalog Number: FAB6285T

100 µg

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human ULBP-4/RAET1E in direct ELISAs and Western blots. In Western blots, approximately 20% cross-reactivity with recombinant human (rh) ULBP-2 is observed and no cross-reactivity with rhULBP-1 or rhULBP-3 is observed.
Source	Monoclonal Mouse IgG_{2B} Clone # 709116
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human ULBP-4/RAET1E Gly30-Asp225 Accession # Q8TD07
Conjugate	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Flow Cytometry	0.25-1 µg/10^6 cells	HepG2 human hepatocellular carcinoma cell line

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Protect from light. Do not freeze.** ● 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

ULBP-4 (cytomegalovirus glycoprotein UL16 binding protein 4), also called RAET1E (retinoic acid early transcript 1E), Letal (lymphocyte effector cell toxicity activating ligand) and NKG2DL4 (NKG2D ligand 4), is a 40-50 kDa member of the ULBP/RAET1 family of cell surface proteins that function as ligands for NKG2D (1-6). While most family members are GPI-anchored, only ULBP-4/RAET1E and ULBP-5/RAET1G express a transmembrane form (1, 4, 6, 7). Human ULBP-4 mRNA encodes 263 amino acids (aa) including a 30 aa signal sequence, a 195 aa extracellular domain (ECD), a 23 aa transmembrane domain, and a 15 aa cytoplasmic sequence. A soluble 35 kDa form diverges at aa 208 and is thought to antagonize the transmembrane form (5). Other potential splice variants of 220, 227 and 280 aa are transmembrane proteins (8). Within the ECD, ULBP-4 shares 34-41% aa sequence identity with family members (1, 7). Rodent NKG2D ligands Rae-1 α-ε are, like human ULBP and MIB proteins, distantly related to MHC class I proteins, but none of the families share significant sequence identity (2, 4). Low expression of ULBP-4 mRNA is found in normal tissues, with high expression variably reported in the small intestine (3) and skin (4). Expression is stimulated by TNF-α and down-regulated by retinoic acid (3). ULBP-4 is abnormally expressed on most colon cancer and some other tumor cell lines and virus-infected peripheral blood cells (3, 6). ULBP-4 binds and costimulates NKG2D-expressing effector cells including NK cells, NKT cells, γδ T cells, and $CD8^+$ αβ T cells, activating cytolytic activity and/or cytokine production (3, 4, 7). In some γδ T cells, direct ULBP-4 binding to both TCRγδ and NKG2D has been demonstrated (6). ULBP-4 is also thought to function as a minor histocompatibility antigen in humans (1).

References:

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6. Kong, Y. *et al.* (2009) Blood **114**:310.
7. Bacon, L. *et al.* (2004) J. Immunol. **173**:1078.
8. Cao, W. *et al.* (2008) Int. Immunol. **20**:981.

PRODUCT SPECIFIC NOTICES

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