

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse ULBP-1 /MULT-1.
Source	Monoclonal Rat IgG _{2A} Clone # 237104
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	BaF3 mouse pro-B cell line transfected with mouse ULBP-1 /MULT-1
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 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	Mouse ULBP-1 /MULT-1 transfected Baf/3 cells

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-1, also known as MULT-1 (mouse UL16-binding protein-like Transcript 1), is a 53 kDa, MHC Class I-like molecule that belongs to the mouse family of NKG2D ligands (1-4). It is a type I transmembrane glycoprotein that is synthesized as a 334 amino acid (aa) precursor. It contains a 25 aa signal sequence, a 186 aa extracellular region, a 19 aa transmembrane segment and a 104 aa cytoplasmic tail (2). The extracellular region contains an α1 and α2 like domain with two intrachain disulfide bonds. ULBP-1 is distantly related to other human and mouse NKG2D ligands, and more distantly related to the MHC class I proteins (3). Unlike most NKG2D ligands, transcripts for ULBP-1 have been detected in a wide variety of mouse tissues and tumor cell lines (3). The receptor for ULBP-1 is NKG2D, a 35 kDa C-type lectin that is found on mouse NK cells, activated CD8⁺ T cells, epidermal γδ T cells, and activated macrophages (1, 5, 6, 7). Recombinant ULBP-1 protein binds to NKG2D with high affinity (K_D = 6 nM) (2). Although an activating receptor, general cellular responses to NKG2D ligation depend upon the isoform of NKG2D and the cell type (5). Exposure to immobilized ULBP-1 or ULBP-1-transfected cells elicits IFN-γ production by NK cells (3). Ectopic expression of ULBP-1 on the RMA mouse tumor cell line leads to tumor rejection in syngeneic mice (3).

References:

1. Raulet, D.H. (2003) *Nat. Rev. Immunol.* **3**:781.
2. Carayannopoulos, L. *et al.* (2002) *J. Immunol.* **169**:4079.
3. Diefenbach, A. *et al.* (2003) *Eur. J. Immunol.* **33**:381.
4. Krmpotic, A. *et al.* (2005) *J. Exp. Med.* **201**:211.
5. Diefenbach, A. *et al.* (2002) *Nat. Immunol.* **3**:1142.
6. Ho, E.L. *et al.* (1998) *Proc. Natl. Acad. Sci. USA* **95**:6320.
7. Carayannopoulos, L.N. *et al.* (2002) *Eur. J. Immunol.* **32**:597.

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.