

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human TIM-3 in direct ELISAs.
Source	Recombinant Monoclonal Rabbit IgG Clone # 2321C
Purification	Protein A or G purified from cell culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human TIM-3 Met1-Arg200 Accession # Q8TDQ0
Conjugate	Alexa Fluor 350 Excitation Wavelength: 346 nm Emission Wavelength: 442 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	Human PBMC

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. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

TIM-3 (T cell immunoglobulin and mucin domain-3) is a 60 kDa member of the TIM family of immune regulating molecules. TIMs are type I transmembrane glycoproteins with one Ig-like V-type domain and a Ser/Thr-rich mucin stalk (1-3). There are three TIM genes in human and eight in mouse. Mature human TIM-3 consists of a 181 amino acid (aa) extracellular domain (ECD), a 21 aa transmembrane segment, and a 78 aa cytoplasmic tail (4). An alternately spliced isoform is truncated following a short substitution after the Ig-like domain. Within the ECD, human TIM-3 shares 58% aa sequence identity with mouse and rat TIM-3. TIM-3 is expressed on the surface of effector T cells (CD4⁺ Th1 and CD8⁺ Tc1) but not on helper T cells (CD4⁺ Th2 and CD8⁺ Tc2) (4, 5). NK cells appear to transcribe the highest amounts of Tim-3 among lymphocytes, and when Tim-3 was cross-linked with antibodies it suppressed NK cell-mediated cytotoxicity (6). In chronic inflammation, autoimmune disorders, and some cancers, TIM-3 is upregulated on several other hematopoietic cell types. It also occurs on hippocampal neurons (7-10). The Ig domain of TIM-3 interacts with a ligand on resting but not activated Th1 and Th2 cells (5, 11). The glycosylated Ig domain of TIM-3 binds cell-associated galectin-9. This induces TIM-3 Tyr phosphorylation and pro-apoptotic signaling (8, 12). TIM-3 functions as a negative regulator of Th1 cell activity. Its blockade results in increased IFN-γ production, Th1 cell proliferation and cytotoxicity (5, 10, 11), and regulatory T cell development (5). TIM-3 inhibits the antitumor efficacy of DNA vaccines and chemotherapy by binding to the damage-associated molecular pattern molecule, HMGB1 (13).

References:

- Anderson, A.C. and D.E. Anderson (2006) *Curr. Opin. Immunol.* **18**:665.
- Mariat, C. *et al.* (2005) *Phil. Trans. R. Soc. B.* **360**:1681.
- Meyers, J.H. *et al.* (2005) *Trends Mol. Med.* **11**:362.
- Monney, L. *et al.* (2002) *Nature* **415**:536.
- Sanchez-Fueyo, A. *et al.* (2003) *Nat. Immunol.* **4**:1093.
- Ndhlovu, L. *et al.* (2012) *Blood* **119**:3734.
- Wiener, Z. *et al.* (2007) *J. Invest. Dermatol.* **127**:906.
- van de Weyer, P.S. *et al.* (2006) *Biochem. Biophys. Res. Commun.* **351**:571.
- Gielen, A.W. *et al.* (2005) *J. Neuroimmunol.* **164**:93.
- Oikawa, T. *et al.* (2006) *J. Immunol.* **177**:4281.
- Sabatos, C.A. *et al.* (2003) *Nat. Immunol.* **4**:1102.
- Zhu, C. *et al.* (2005) *Nat. Immunol.* **6**:1245.
- Chiba, S. *et al.* (2012) *Nat. Immunol.* **13**:832.

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.