

DESCRIPTION

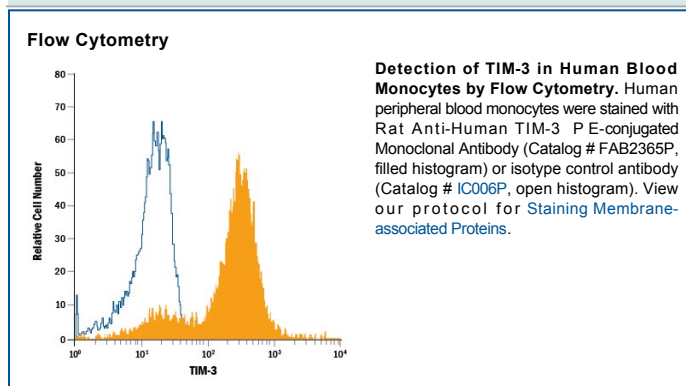
Species Reactivity	Human
Specificity	Detects human TIM-3 in direct ELISAs and Western blots. Does not cross-react with recombinant human (rh) TIM-1, rhTIM-4, recombinant mouse (rm) TIM-1, rmTIM-2, rmTIM-3, rmTIM-5, or rmTIM-6.
Source	Monoclonal Rat IgG _{2A} Clone # 344823
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human TIM-3 Ser22-Arg200 Accession # Q8TDQ0.2
Conjugate	Phycoerythrin Excitation Wavelength: 488 nm Emission Wavelength: 565-605 nm
Formulation	Supplied 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	10 μ L/10 ⁶ cells	See Below

DATA



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), also known as HAVCR2, 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 region (1, 2). 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 (3). An alternatively spliced isoform is truncated within the mucin-like stalk. Within the ECD, human TIM-3 shares 58% aa sequence identity with mouse and rat TIM-3. TIM-3 is up-regulated on several populations of activated myeloid cells (macrophage, monocyte, dendritic cell, microglia, mast cell) and T cells (Th1, CD8⁺, NK, Treg) (3-10). Its binding to Galectin-9 induces a range of immunosuppressive functions which enhance immune tolerance and inhibit anti-tumor immunity (11). TIM-3 ligation attenuates CD8⁺ and Th1 cell responses (11-13) and promotes the activity of Treg and myeloid derived suppressor cells (8, 11, 13, 14). In addition, dendritic cell-expressed TIM-3 dampens inflammation by enabling the phagocytosis of apoptotic cells and the cross-presentation of apoptotic cell antigens (4). It also binds the alarmin HMGB1, thereby preventing the activation of TLRs in response to released tumor cell DNA (7). TIM-3 interactions with Galectin-9 can alternatively trigger immune stimulatory effects, such as the coactivation of NK cell cytotoxicity (10).

References:

1. Sakuishi, K. *et al.* (2011) *Trends Immunol.* **32**:345.
2. Anderson, A.C. (2012) *Curr. Opin. Immunol.* **24**:213.
3. Monney, L. *et al.* (2002) *Nature* **415**:536.
4. Nakayama, M. *et al.* (2009) *Blood* **113**:3821.
5. Anderson, A.C. *et al.* (2007) *Science* **318**:1141.
6. Wiener, Z. *et al.* (2007) *J. Invest. Dermatol.* **127**:906.
7. Chiba, S. *et al.* (2012) *Nat. Immunol.* **13**:832.
8. Sanchez-Fueyo, A. *et al.* (2003) *Nat. Immunol.* **4**:1093.
9. Ndhlovu, L.C. *et al.* (2012) *Blood* **119**:3734.
10. Gleason, M.K. *et al.* (2012) *Blood* **119**:3064.
11. Zhu, C. *et al.* (2005) *Nat. Immunol.* **6**:1245.
12. Sakhdari, A. *et al.* (2012) *PLoS ONE* **7**:e40146.
13. Sabatos, C.A. *et al.* (2003) *Nat. Immunol.* **4**:1102.
14. Dardalhon, V. *et al.* (2010) *J. Immunol.* **185**:1383.