

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived		
	Cynomolgus Monkey TIM-3 (Ser22-Arg201) Accession # EHH54703	IEGRMD	Human IgG ₁ (Pro100-Lys330)
	N-terminus		C-terminus
N-terminal Sequence Analysis	Ser22 & Val24		
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	46.3 kDa (monomer)		

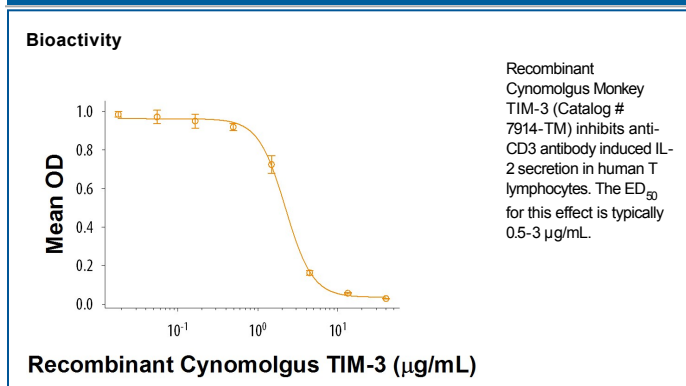
SPECIFICATIONS

SDS-PAGE	60-75 kDa, reducing conditions
Activity	Measured by its ability to inhibit anti-CD3 antibody induced IL-2 secretion in human T lymphocytes. The ED ₅₀ for this effect is typically 0.5-3 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA



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 cynomolgus TIM-3 consists of a 182 amino acid (aa) extracellular domain (ECD), a 21 aa transmembrane segment, and a 78 aa cytoplasmic tail. Within the ECD, cynomolgus (or crab-eating macaque) monkey TIM-3 shares 81%, 57%, and 56% aa sequence identity with human, mouse, and rat TIM-3, respectively. 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 (3). It also binds the alarmin HMGB1, thereby preventing the activation of TLRs in response to released tumor cell DNA (6). Soluble TIM-3 is also reported to inhibit the response of T cells to both Ag-induced and concurrent CD3/CD28 stimulation (15). By contrast, TIM-3 interactions with Galectin-9 can 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. Nakayama, M. *et al.* (2009) Blood **113**:3821.
4. Anderson, A.C. *et al.* (2007) Science **318**:1141.
5. Wiener, Z. *et al.* (2007) J. Invest. Dermatol. **127**:906.
6. Chiba, S. *et al.* (2012) Nat. Immunol. **13**:832.
7. Monney, L. *et al.* (2002) Nature **415**:536.
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.
15. Geng, H. *et al.* (2006) J. Immunol. **176**:1411.