

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human TIM-1/KIM-1/HAVCR in ELISAs and Western blots. In sandwich immunoassays, less than 0.1% cross-reactivity with recombinant mouse (rm) TIM-1, recombinant rat TIM-1, and recombinant human (rh) TIM-4 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human TIM-1/KIM-1/HAVCR (R&D Systems, Catalog # 1750-TM) Ser21-Thr288 Accession # Q96D42
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

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
Western Blot	0.1 µg/mL	Recombinant Human TIM-1/KIM-1/HAVCR (Catalog # 1750-TM)
Human TIM-1/KIM-1/HAVCR Sandwich Immunoassay		Reagent
ELISA Capture	0.2-0.8 µg/mL	Human TIM-1/KIM-1/HAVCR Antibody (Catalog # AF1750)
ELISA Detection	0.1-0.4 µg/mL	Human TIM-1/KIM-1/HAVCR Biotinylated Antibody (Catalog # BAF1750)
Standard		Recombinant Human TIM-1/KIM-1/HAVCR (Catalog # 1750-TM)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> 12 months from date of receipt, -20 to -70 °C as supplied. 1 month from date of receipt, 2 to 8 °C, reconstituted. 6 months from date of receipt, -20 to -70 °C, reconstituted.

* This product is covered by one or more of the following US Patents 7,300,652; 7,041,290; 6,664,385 and other US and foreign patents pending or issued.

BACKGROUND

TIM-1 (T cell-immunoglobulin-mucin; also known as KIM-1 and HAVCR) is a 100 kDa, type I transmembrane glycoprotein member of the TIM family of immunoglobulin superfamily molecules (1-3). This gene family is involved in the regulation of Th1 and Th2-cell-mediated immunity. Human TIM-1 is synthesized as a 359 amino acid (aa) precursor that contains a 20 aa signal sequence, a 270 aa extracellular domain (ECD), a 21 aa transmembrane segment and a 48 aa cytoplasmic domain (4-6). The ECD contains one V-type Ig-like domain and a mucin region characterized by multiple PTTTTL motifs. The mucin region undergoes extensive O-linked glycosylation. The TIM-1 gene is highly polymorphic and undergoes alternate splicing (1). For instance, the presence of a six aa sequence (MTTTPV) at position #137 of the mature molecule is associated with protection from atopy in people with a history of hepatitis A (7, 8). There are two cytoplasmic alternate splice forms of TIM-1. One is a long (359 aa) kidney form termed TIM-1b, and one is a short (334 aa) liver form termed TIM-1a. Both are identical through the first 323 aa of their precursors. TIM-1b contains a tyrosine phosphorylation motif that is not present in 1a (6). TIM-1 is also known to circulate as a soluble form. Constitutive cleavage by an undefined MMP (possibly ADAM33) releases an 85-90 kDa soluble molecule (6). The ECD of human TIM-1 is 50% and 43% aa identical to mouse and canine TIM-1 ECD, respectively. The only two reported ligands for TIM-1 are TIM-4 and the hepatitis A virus (4, 9). However, others are believed to exist, and based on the ligand for TIM-3, one may well be an S-type lectin (10). TIM-1 ligation induces T cell proliferation and promotes cytokine production (1, 10).

References:

1. Meyers, J.H. *et al.* (2005) Trends Mol. Med. **11**:1471.
2. Kuchroo, V.K. *et al.* (2003) Nat. Rev. Immunol. **3**:454.
3. Mariat, C. *et al.* (2005) Phil. Trans. R. Soc. B **360**:1681.
4. Feigelstock, D. *et al.* (1998) J. Virol. **72**:6621.
5. Ichimura, T. *et al.* (1998) J. Biol. Chem. **273**:4135.
6. Bailly, V. *et al.* (2002) J. Biol. Chem. **277**:39739.
7. Umetsu, D.T. *et al.* (2005) J. Pediatr. Gastroenterol. Nutr. **40**:S43.
8. Gao, P-S. *et al.* (2005) J. Allergy Clin. Immunol. **115**:982.
9. Zhu, C. *et al.* (2005) Nat. Immunol. **6**:1245.
10. Meyers, J.H. *et al.* (2005) Nat. Immunol. **6**:455.