

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse TIM-1/KIM-1/HAVCR in direct ELISAs and Western blots. In direct ELISAs and Western blots, less than 5% cross-reactivity with recombinant human TIM-1, recombinant mouse (rm) TIM-2, rmTIM-3, rmTIM-4, rmTIM-6, and rmTIM-7 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse TIM-1/KIM-1/HAVCR Tyr22-Thr212 Accession # Q3V033
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 Mouse TIM-1/KIM-1/HAVCR (Catalog # 1817-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, 2 to 8 °C under sterile conditions after reconstitution. 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

TIM-1 (T cell-immunoglobulin-mucin; also KIM-1 and HAVCR) is a 70-80 kDa, type I transmembrane glycoprotein member of the TIM family of immunoglobulin superfamily molecules (1-4). This gene family is involved in the regulation of Th1 and Th2-cell-mediated immunity. In mouse, there are eight known TIM genes (# 1-8) vs. only three genes in human (# 1, 3, and 4) (1, 2). Mouse TIM-1 and -2 are counterparts of human TIM-1 while mouse TIM-5 through 8 have no human counterparts (2). Mouse TIM-1 is synthesized as a 305 amino acid (aa) precursor that contains a 21 aa signal sequence, a 216 aa extracellular domain (ECD), a 21 aa transmembrane segment and a 47 aa cytoplasmic domain (5, 6). The ECD contains one V-type Ig-like domain and a mucin region characterized by multiple T-S-P motifs. The mucin region undergoes extensive O-linked glycosylation. The mouse TIM-1 gene is highly polymorphic and, based on rat, may undergo alternate splicing (4, 6). For instance, HBA mice show a 15 aa deletion in the mucin region that occurs in BALB/c mice (6). This difference is associated with a decreased susceptibility to asthma. Other polymorphisms are also documented (6). In human, TIM-1 is known to circulate as a soluble form. It undergoes constitutive cleavage by an undefined MMP, releasing a 75-85 kDa soluble molecule (5). The same thing might be expected in mouse. The ECD of mouse TIM-1 is 50%, 39%, and 80% aa identical to human, canine and rat TIM-1 ECD, respectively. The only two reported ligands for TIM-1 are TIM-4 and the hepatitis A virus (8, 9). However, others are believed to exist, and based on the ligand for TIM-3, one possibility might be an S-type lectin (10). TIM-1 ligation induces T cell proliferation and promotes cytokine production (1, 10). In particular, it induces IL-4 production, and requires the cytoplasmic tyrosine phosphorylation motif (5).

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. Ichimura, T. *et al.* (1998) J. Biol. Chem. **273**:4135.
5. de Souza, A.J. *et al.* (2005) Proc. Natl. Acad. Sci. USA **102**:17113.
6. McIntire, J.J. *et al.* (2001) Nat. Immunol. **2**:1109.
7. Bailly, V. *et al.* (2002) J. Biol. Chem. **277**:39739.
8. Feigelstock, D. *et al.* (1998) J. Virol. **72**:6621.
9. Zhu, C. *et al.* (2005) Nat. Immunol. **6**:1245.
10. Meyers, J.H. *et al.* (2005) Nat. Immunol. **6**:455.