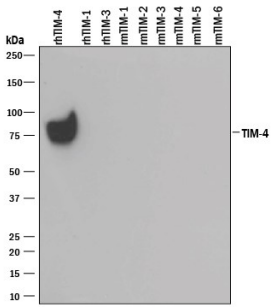
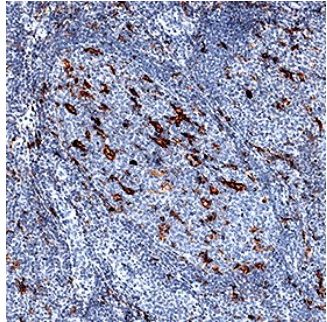


DESCRIPTION	
<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human TIM-4 in direct ELISAs and Western blots. In direct ELISAs, less than 1% cross-reactivity with recombinant human (rh) TIM-1 and recombinant mouse (rm) TIM-4 is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant human TIM-4 (R&D Systems, Catalog # 2929-TM) Glu25-Leu315 Accession # Q96H15
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

APPLICATIONS		
<b>Please Note:</b> Optimal dilutions should be determined by each laboratory for each application. <a href="#">General Protocols</a> are available in the Technical Information section on our website.		
	Recommended Concentration	Sample
<b>Western Blot</b>	0.1 µg/mL	See Below
<b>Immunohistochemistry</b>	1-15 µg/mL	See Below

DATA	
<p><b>Western Blot</b></p>  <p><b>Detection of Recombinant Human TIM-4 by Western Blot.</b> Western blot shows 25 ng of Recombinant Human TIM-4 His-tag (Catalog # 2929-TM), Recombinant Human TIM-1/KIM-1/HAVCR (Catalog # 1750-TM), Recombinant Human TIM-3 Fc Chimera (Catalog # 2365-TM), Recombinant Mouse TIM-1/KIM-1/HAVCR (Catalog # 1817-TM), Recombinant Mouse TIM-2 (Catalog # 1885-TM), Recombinant Mouse TIM-3 Fc Chimera (Catalog # 1529-TM), Recombinant Mouse TIM-4 (Catalog # 2826-TI), Recombinant Mouse TIM-5, and Recombinant Mouse TIM-6. PVDF Membrane was probed with 0.1 µg/mL of Goat Anti-Human TIM-4 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2929) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). A specific band was detected for TIM-4 at approximately 75 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 3.</p>	<p><b>Immunohistochemistry</b></p>  <p><b>TIM-4 in Human Tonsil.</b> TIM-4 was detected in immersion fixed paraffin-embedded sections of human tonsil using Goat Anti-Human TIM-4 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2929) at 1 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Goat IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC004). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to cell membranes of macrophages. View our protocol for <a href="#">IHC Staining with VisUCyte HRP Polymer Detection Reagents</a>.</p>

PREPARATION AND STORAGE	
<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

#### BACKGROUND

TIM-4 (T cell; immunoglobulin; mucin-4), also known as SMUCKLER, is a 60 kDa member of the TIM family of immune regulating proteins. TIMs are type I transmembrane proteins with one Ig-like V domain and one Ser/Thr-rich mucin domain (1 - 3). The human TIM-4 cDNA encodes a 378 amino acid (aa) precursor that includes a 24 aa signal sequence, a 290 aa extracellular domain (ECD), a 21 aa transmembrane segment, and a 43 aa cytoplasmic tail (4). Structurally, TIM-4 is distinguished from other TIMs by the presence of an RGD motif in its Ig domain and the lack of a site for tyrosine phosphorylation in its cytoplasmic tail. The mucin domain in TIM-4 is larger than in TIM-1 or TIM-3. Within the ECD, human TIM-4 shares 35% and 23% aa sequence identity with TIM-1 and TIM-3, respectively. A TIM-2 ortholog has not been identified in human. The ECD of human TIM-4 shares 45% aa sequence identity with that of mouse and rat TIM-4. TIM-4 is expressed by macrophages and mature dendritic cells but not by lymphocytes (4, 5). TIM-4 binds specifically to TIM-1 which is also the cellular receptor for the hepatitis A virus, and has been implicated in the development of asthma (5 - 7). Among hematopoietic cells, TIM-1 is expressed on activated B and T cells, preferentially in the Th2 subset of CD4<sup>+</sup> T cells (5, 8). The interaction of TIM-4 with TIM-1 induces costimulatory and hyperproliferative signals in T cells (5).

#### References:

1. Kuchroo, V.K. *et al.* (2003) *Nat. Rev. Immunol.* **3**:454.
2. Mariat, C. *et al.* (2005) *Phil. Trans. R. Soc. B* **360**:1681.
3. Meyers, J.H. *et al.* (2005) *Trends Mol. Med.* **11**:362.
4. Shakhov, A.N. *et al.* (2004) *Eur. J. Immunol.* **34**:494.
5. Meyers, J.H. *et al.* (2005) *Nat. Immunol.* **6**:455.
6. Feigelstock, D. *et al.* (1998) *J. Virol.* **72**:6621.
7. McIntire, J.J. *et al.* (2001) *Nat. Immunol.* **2**:1109.
8. Khademi, M. *et al.* (2004) *J. Immunol.* **172**:7169.