10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

TIM-4 Antibody

Catalog # ASC10424

Product Information

Application	WB, IF, ICC, E
Primary Accession	Q96H15
Other Accession	NP_612388, 226529863
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	41578
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	TIM-4 antibody can be used for the detection of TIM-4 by Western blot at 1 - 2 g/mL. Antibody can also be used for immunocytochemistry starting at 10 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	91937
Other Names	TIM-4 Antibody: TIM4, SMUCKLER, TIM4, T-cell immunoglobulin and mucin domain-containing protein 4, T-cell immunoglobulin mucin receptor 4, TIMD-4, T-cell immunoglobulin and mucin domain containing 4
Target/Specificity	TIMD4; At least four isoforms of TIM-4 are known to exist; this antibody will detect all four isoforms.
Reconstitution & Storage	TIM-4 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	TIM-4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TIMD4
Synonyms	TIM4
Function	Phosphatidylserine receptor that plays different role in immune response including phagocytosis of apoptotic cells and T-cell regulation. Controls T-cell activation in a bimodal fashion, decreasing the activation of naive T-cells by inducing cell cycle arrest, while increasing proliferation of activated T-cells by activating AKT1 and ERK1/2 phosphorylations and subsequent signaling

	pathways (By similarity). Also plays a role in efferocytosis which is the process by which apoptotic cells are removed by phagocytic cells (PubMed:32703939, PubMed:34067457). Mechanistically, promotes the engulfment of apoptotic cells or exogenous particles by securing them to phagocytes through direct binding to phosphatidylserine present on apoptotic cells, while other engulfment receptors such as MERTK efficiently recognize apoptotic cells and mediate their ingestion (PubMed:32640697). Additionally, promotes autophagy process by suppressing NLRP3 inflammasome activity via activation of LKB1/PRKAA1 pathway in a phosphatidylserine-dependent mechanism (By similarity).
Cellular Location	Cell membrane; Single-pass type I membrane protein. Secreted, extracellular exosome

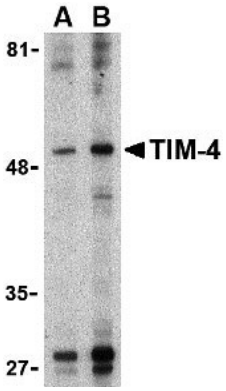
Background

TIM-4 Antibody: The T cell immunoglobulin and mucin domain containing protein (TIM) family encodes cell surface receptors that are involved in the regulation of T helper (Th) -1 and -2 cell-mediated immunity. TIM-4, which is preferentially expressed on macrophages and dendritic cells, is the natural ligand of TIM-1, and this binding leads to T-cell expansion and cytokine production. Unlike other members of the TIM family, TIM-4 lacks a putative tyrosine phosphorylation signal sequence in its intracellular domain. The TIM-4 gene maps to a locus associated with predisposition to asthma in both mice and humans and with its connection to TIM-1-triggered Th2 responsiveness, may be considered as a candidate disease/predisposition gene for asthma.

References

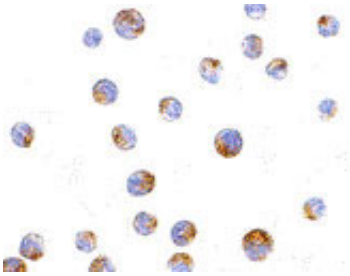
Meyers JH, Sabatos CA, Chakravarti S, et al. The TIM family regulates autoimmune and allergic diseases. Trends Mol. Med. 2005; 11:362-9.
Meyers JH, Chakravarti S, Schlesinger D, et al. TIM-4 is the ligand for TIM-1, and the TIM-1-TIM4 interaction regulates T cell proliferation. Nat. Immunol. 2005; 6:455-64.
Kuchroo VK, Umetsu DT, DeKruyff RH, et al. The TIM gene family: emerging roles in immunity and disease. Nat. Rev. Immunol. 2003; 3:454-62.
Shakhov AN, Rybtsov S, Tumanov AV, et al. SMUCKLER/TIM4 is a distinct member of TIM family expressed by stromal cells of secondary lymphoid tissues and associated with lymphotoxin signaling.

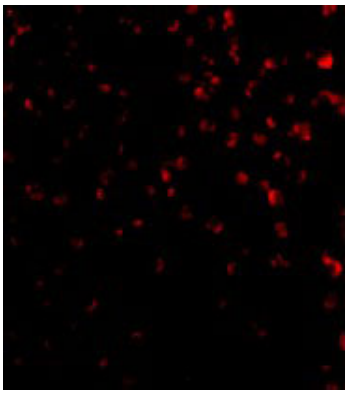
Images



Western blot analysis of TIM-4 in Jurkat lysate with TIM-4 antibody at (A) 1 and (B) 2 µg/mL.

Immunocytochemistry of TIM-4 in Jurkat cells with TIM-4 antibody at 10 µg/mL.





Immunofluorescence of TIM-4 in Jurkat cells with TIM-4 antibody at 20 µg/mL.