

# TIM-3 (M-171): sc-292390

## BACKGROUND

CD4<sup>+</sup> T helper lymphocytes can be divided into types 1 (Th1) and 2 (Th2) on the basis of their cytokine secretion patterns. Th1 cells and their associated cytokines are involved in cell-mediated immunity to intracellular pathogens and delayed-type hypersensitivity reactions. Th2 cells are involved in the control of extracellular helminthic infections and the promotion of atopic and allergic diseases. T cell Ig- and Mucin-domain-containing molecules (TIMs) are a family of molecules expressed on T cells. TIM-3 is a Th1-specific cell surface protein that regulates macrophage activation and enhances the severity of experimental autoimmune encephalomyelitis in mice. TIM-3 binds galectin-9, thereby inducing apoptosis of Th1 cells. This interaction with galectin-9 also stimulates the phosphorylation of Tim-3 on residue Y265 by the interleukin-inducible T cell kinase, Emt.

## REFERENCES

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2. Sánchez-Fueyo, A., et al. 2003. TIM-3 inhibits T helper type 1-mediated auto- and alloimmune responses and promotes immunological tolerance. *Nat. Immunol.* 4: 1093-1101.
3. Sabatos, C.A., et al. 2003. Interaction of TIM-3 and TIM-3 ligand regulates T helper type 1 responses and induction of peripheral tolerance. *Nat. Immunol.* 4: 1102-1110.
4. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 606652. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Chae, S.C., et al. 2004. Molecular variations in Th1-specific cell surface gene TIM-3. *Exp. Mol. Med.* 36: 274-278.
6. Khademi, M., et al. 2004. T cell Ig- and mucin-domain-containing molecule-3 (TIM-3) and TIM-1 molecules are differentially expressed on human Th1 and Th2 cells and in cerebrospinal fluid-derived mononuclear cells in multiple sclerosis. *J. Immunol.* 172: 7169-7176.
7. Simmons, W.J., et al. 2005. TIM-3<sup>+</sup> T-bet<sup>+</sup> tumor-specific Th1 cells co-localize with and inhibit development and growth of murine neoplasms. *J. Immunol.* 174: 1405-1415.
8. Koguchi, K., et al. 2006. Dysregulated T cell expression of TIM3 in multiple sclerosis. *J. Exp. Med.* 203: 1413-1418.
9. van de Weyer, P.S., et al. 2006. A highly conserved tyrosine of Tim-3 is phosphorylated upon stimulation by its ligand galectin-9. *Biochem. Biophys. Res. Commun.* 351: 571-576.

## CHROMOSOMAL LOCATION

Genetic locus: Havcr2 (mouse) mapping to 11 B1.1.

## SOURCE

TIM-3 (M-171) is a rabbit polyclonal antibody raised against amino acids 111-281 mapping at the C-terminus of TIM-3 of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

TIM-3 (M-171) is recommended for detection of TIM-3 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for TIM-3 siRNA (m): sc-72015, TIM-3 shRNA Plasmid (m): sc-72015-SH and TIM-3 shRNA (m) Lentiviral Particles: sc-72015-V.

Molecular Weight of TIM-3: 33 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS

1. Maurya, N., et al. 2014. Immunoregulation of dendritic cells by the receptor T cell Ig and mucin protein-3 via Bruton's tyrosine kinase and c-Src. *J. Immunol.* 193: 3417-3425.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

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Try **TIM-3 (RMT3-23): sc-53771**, our highly recommended monoclonal alternative to TIM-3 (M-171).