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TIGIT Antibody [4A10]

Catalog # ASC12151

Product Information

Application	WB, IHC-P, IF, ICC, E
Primary Accession	Q495A1
Other Accession	NP_776160
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Clone Names	TIGIT
Calculated MW	26319

Additional Information

Gene ID	201633
Alias Symbol	TIGIT
Other Names	TIGIT Antibody: T-cell immunoreceptor with Ig and ITIM domains, VSIG9, VSTM3, WUCAM
Reconstitution & Storage	TIGIT antibody can be stored at 4˚C for three months and -20˚C, 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	TIGIT Antibody [4A10] is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TIGIT
Synonyms	VSIG9, VSTM3
Function	Inhibitory receptor that plays a role in the modulation of immune responses. Suppresses T-cell activation by promoting the generation of mature immunoregulatory dendritic cells (PubMed:19011627). Upon binding to its ligands PVR/CD155 or NECTIN2/CD112, which are expressed on antigen-presenting cells, sends inhibitory signals to the T-cell or NK cell. Mechanistically, interaction with ligand leads to phosphorylation of the cytoplasmic tail by Src family tyrosine kinases such as FYN or LCK, allowing subsequent binding to adapter GRB2 and SHIP1/INPP5D. In turn, inhibits PI3K and MAPK signaling cascades (PubMed:23154388). In addition, associates with beta-arrestin-2/ARRB2 to recruit SHIP1/INPP5D that suppresses autoubiquitination of TRAF6 and subsequently inhibits NF- kappa-B signaling pathway (PubMed:24817116). Also acts as a receptor for NECTIN4 to inhibit NK cell cytotoxicity (PubMed:32503945).

Cellular Location	Cell membrane; Single-pass type I membrane protein. Note=Clustered to the immunological synapse where it disrupts granule polarization and cytotoxicity of NK cells once engaged with PVR.
Tissue Location	Expressed at low levels on peripheral memory and regulatory CD4+ T-cells and NK cells and is up-regulated following activation of these cells (at protein level)

Background

TIGIT Antibody: The T cell immunoreceptor with Ig and ITIM domains (TIGIT) is a member of the PVR (poliovirus receptor) family of immunoglobin proteins. It is expressed on several classes of T cells including follicular B helper T cells (TFH). TIGIT has been shown to bind PVR with high affinity; this binding is thought to assist interactions between TFH and dendritic cells to regulate T cell dependent B cell responses (1). Similar to other immune checkpoint proteins such as PD-1, TIGIT is upregulated on exhausted T cells in chronic viral infections and cancer. Blockade of both TIGIT and PD-1 pathways leads to tumor rejection in mice suggesting that it may be of therapeutic use against cancer (2).

References

Stanietsky N, Simic H, Arapovic J, et al. The interaction of TIGIT with PVR and PVRL2 inhibits human NK cell cytotoxicity. Proc Natl Acad Sci USA 2009; 106:17858-63.Johnston RJ, Comps-Agrar L, Hackney J, et al. The immunoreceptor TIGIT regulates antitumor and antiviral CD8(+) T cell effector function. Cancer Cell 2014; 26:923-37.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.