Anti-hTIGIT-hIgG1NQ

Non-glycosylated monoclonal human IgG1 antibody against human TIGIT

Catalog code: htigit-mab12

https://www.invivogen.com/nongylco-anti-htigit-mab

For research use only, not for diagnostic or therapeutic use

Version 19J24-ED

PRODUCT INFORMATION

Contents:

• 100 µg of Anti-hTIGIT-hIgG1NQ, provided azide-free and lyophilized

Target: TIGIT (T cell immunoreceptor with immunoglobulin and immunoreceptor tyrosine-based inhibitory motif domain)

Species reactivity: Human

Source: CHO cells

Isotype: Human IgG1

Light chain type: Kappa

Clonality: Monoclonal

Purification: By affinity chromatography with protein G

Formulation: 0.2 µm filtered solution in a sodium phosphate buffer with glycine, saccharose, and stabilizing agents

Storage

- Product is shipped at room temperature. Store lyophilized antibody at -20 °C. Lyophilized product is stable for at least 1 year.
- Reconstituted antibody is stable for 1 month when stored at 4°C and for 1 year when aliquoted and stored at -20 °C. Avoid repeated freeze-thaw cycles.

Quality control

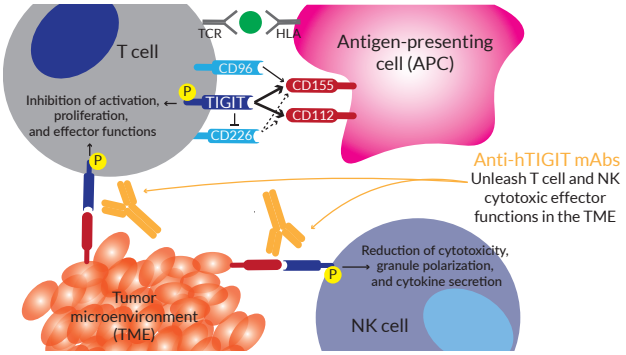
- Binding of Anti-hTIGIT-hIgG1NQ to human TIGIT on target cells has been confirmed using flow cytometry.
- The complete sequence of the antibody has been verified.
- Absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and TLR4 cellular assays.

PRODUCT DESCRIPTION

Anti-hTIGIT-hIgG1NQ is a recombinant monoclonal antibody (mAb) featuring a variable region that recognizes human TIGIT, an inhibitory immune checkpoint, and a non-glycosylated constant region of the human IgG1 isotype (hIgG1NQ). Anti-hTIGIT-hIgG1NQ was generated by recombinant DNA technology, produced in CHO cells, and purified by affinity chromatography with protein G.

TIGIT - the Immune checkpoint

TIGIT (T cell immunoglobulin and ITIM domain) is an inhibitory checkpoint that has been implicated in tumor immunosurveillance[1]. TIGIT is specifically expressed on immune cells including, natural killer (NK) cells, activated T cells, memory T cells, and a subset of regulatory T cells (Treg). TIGIT binds to CD155 (PVR) and CD112 (PVRL2, nectin-2), which are expressed on antigen-presenting cells (APCs), T cells, and a variety of non-hematopoietic cells including tumor cells. Interestingly, TIGIT competes with CD226 (also known as DNAM-1) and CD96 (also known as Tactile) for the same ligands[1,2]. Upon binding to its ligand, phosphorylation of TIGIT inhibits the NF-κB, P13K, and MAPK pathways.



This leads to a strong reduction of NK cytotoxicity[2]. Additionally, TIGIT directly induces T cell inhibition by blocking activation, proliferation, and effector functions[3].

Due to low expression of TIGIT in peripheral lymphoid organs and highly enriched in tumor infiltrating lymphocytes (TILs), the established synergy of TIGIT with other co-inhibitory immune checkpoints, and its ligands being widely expressed on tumor cells, the blockade of TIGIT is highly favorable in cancer immunotherapy[1,2]. The dual blockade of TIGIT and PD-L1 has shown synergistic effects in a murine tumor model, resulting in complete tumor rejection and induced protective memory responses. A similiar synergistic effect has been noted with PD-1 and Tim-3[1,2]. Interestingly, TIGIT's role in the tumor microenvironment (TME) may also be intertwined with the microbiome. The suppressive function of TIGIT is also exploited by a bacterium commonly found in the TME *Fusobacterum nucleatun*, to inhibit protective immune responses[4].

IgG1NQ Isotype effector function

Anti-hTIGIT-hIgG1NQ contains a N-glycosylation mutation in the constant region of human IgG1. Thus, potential asparagine (N) glycosylation sites are substituted by glutamine (Q) residues, resulting in the production of a non-glycosylated antibody. Glycosylation of an antibody has no effect on antigen binding but is essential for Fc receptor-mediated activity. Therefore, the effector function of Anti-hTIGIT-hIgG1NQ is severely compromised (see reverse side).

1. Solomon, B. L. *et al*, 2018. TIGIT: a novel immunotherapy target moving from bench to bedside. Cancer Immunol Immunother 67, 1659-1667. **2. Anderson, A.C. *et al*. 2016.** Lag-3, Tim-3, and TIGIT: Co-inhibitory Receptors with Specialized Functions in Immune Regulation. Immunity 44, 989-1004. **3. Joller, N. *et al*. 2011.** Cutting edge: TIGIT has T cell-intrinsic inhibitory functions. J Immunol 186, 1338-1342. **4. Gur, C. *et al*. 2015.** Binding of the Fap2 protein of Fusobacterium nucleatum to human inhibitory receptor TIGIT protects tumors from immune cell attack. Immunity 42, 344-355.

METHODS

Anti-hTIGIT-hIgG1NQ resuspension (200 µg/ml)

Note: Ensure you see the lyophilized pellet before resuspension.

- Add 500 µl of sterile water to the vial and gently pipette until completely resuspended.
- Prepare aliquots and store at -20 °C until required.

TECHNICAL SUPPORT
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ANTIBODY ISOTYPE COLLECTION

For your research, InvivoGen provides an **Anti-hTIGIT isotype family**. This collection consists of mAbs comprising the variable region of human TIGIT, and differing constant regions of both native and engineered human isotype IgG1. The isotypes differ in their functional and effector functions, such as antibody-dependent cell-mediated cytotoxicity (ADCC), antibody-dependent cellular phagocytosis (ADCP), and complement dependent cytotoxicity (CDC), as presented in the table below. The Anti-hTIGIT isotype family will assist you in the study of the various effector functions of the different isotypes, and help you determine which isotype is the most suitable for your application.

Effector functions of both native and engineered IgG1 isotypes

Effector functions	Native	Enigneered	
	IgG1	IgG1NQ	IgG1fut
ADCC	++	-	++++
ADCP	+++	-	+++
CDC	++	+/-	++

RELATED PRODUCTS

Product	Catalog Code
Anti-hTIGIT-hIgG1	htigit-mab1
Anti-hTIGIT-hIgG1fut	htigit-mab13
Anti-hPD-L1-hIgG1	hpdl1-mab1
Jurkat-Lucia™ NFAT-CD16 cells	jktl-nfat-cd16
QUANTI-Luc™	rep-qlc1

Note: For more information regarding InvivoGen's ADCC assay please vist our website https://www.invivogen.com/adcc