WHITEPAPER

Anti-TIGIT Rabbit Monoclonal Antibody [BLR047F] - A new member of the immune checkpoint receptors family

BIOCARE MEDICAL

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A New Member of the Immune Checkpoint Receptors Family

Antibodies targeting immune checkpoint receptors, like cytotoxic T lymphocyte antigen-4 (CTLA-4) and cell death protein-1 (PD-1), have recently been utilized in novel immunotherapies as they have demonstrated remarkable clinical efficiency in different tumor types, such as metastatic melanoma, lung cancer, renal, and bladder carcinoma.[1] Because of its success, blockading of other inhibitory immune checkpoint receptors is being explored in hopes of providing further therapeutic options. T-cell immunoglobulin and immunoreceptor tyrosine-based inhibitory domain (TIGIT), a co-inhibitory transmembrane glycoprotein receptor expressed in various T-cell subtypes and natural killer (NK) cells, is an interesting new target for cancer immunotherapies.

> "Tumor infiltrating lymphocytes (TILs) expressing TIGIT have been demonstrated in several tumor types such as non-small cell lung cancer, colorectal carcinoma, melanoma, and acute myeloid leukaemia.[1]"

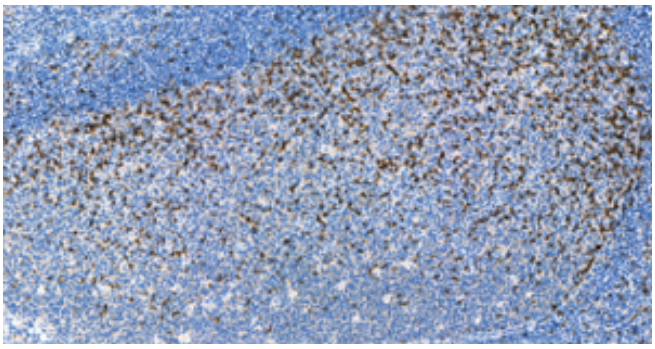
Recent studies have also shown a staining pattern correlation between TIGIT and PD-1, CD4, CD8, FOXP3 as well as other T-cell and NK cell markers.[1,2] Biocare Medical's newly released TIGIT [BLR047F] specificity was evaluated based on multiplex IHC expressions in various T-lymphocytes, NK cells, macrophages, and dendritic cells on tonsil tissue. Co-expression level between TIGIT and utilized antibodies is shown in Table 1.

Table 1

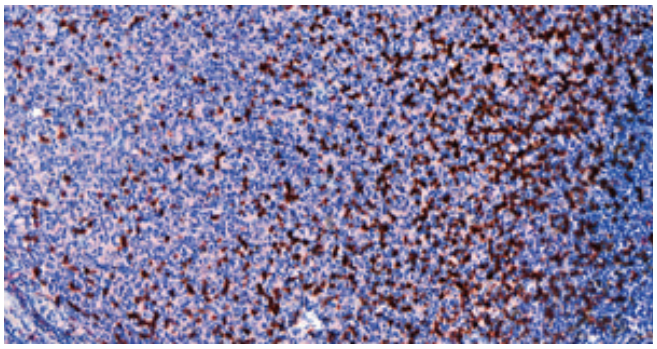
Antibody Cocktail	Target Cells	Co-expression level*
TIGIT [BLR047F] + PD-1 [NAT105]	Activated T-cells	High
TIGIT [BLR047F] + CD3 [PS1]	T-lymphocytes	High
TIGIT [BLR047F] + CD4 [4B12]	T-helper cells	Moderate
TIGIT [BLR047F] + CD8 [C8/144B]	Cytotoxic T-cells	Low
TIGIT [BLR047F] + CD57 [NK-1]	NK cells	Moderate
TIGIT [BLR047F] + FOXP3 [86D]	Regulatory T-cells	Low
TIGIT [BLR047F] + CD68 [KP1]	Macrophages	No co-expression
TIGIT [BLR047F] + CD11c [5D11]	Dendritic cells	No co-expression

*Legend: High - >50% stained cells exhibit co-localization; Moderate – 10-49% stained cells exhibit co-localization; Low - <10% stained cells exhibit co-localization.

In this study, TIGIT [BLR047F] expressed a correct staining pattern and proved to be highly specific and sensitive to T-lymphocytes and NK cells. High level of co-localization of TIGIT and PD-1 antibodies may suggest a co-regulatory function in immune response. TIGIT plays a crucial role in inhibiting the tumor-directed immune response and is a valuable and competitive addition to the current array of antibodies for target immunotherapy research.



TIGIT (RM) [BLR047F] on tonsil



TIGIT (red) + PD-1 (brown) on tonsil

To evaluate TIGIT in your lab, contact Biocare Medical at 800-799-9499 or visit our website www.biocare.net/product/tigit-antibody/

References: 1. Blessin N. *et al.* Patterns of TIGIT expression in lymphatic tissue, Inflammation and cancer. Disease Markers. Vol. 2019. 2. Kurtulus S. *et al.* TIGIT predominantly regulates the immune response via regulatory T cells. J Clin Invest. 2015; 125:4053–4062.