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Anti-mouse TCR γ/δ Antibody

Catalog Number:	208901, 208902
Size:	25 µg, 100 µg
Target Name:	TCR γ/δ, T cell receptor γ/δ
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	mgdAHA
Application:	Flow Cytometry
Reactivity:	Mouse
Format:	Purified
Isotype:	Armenian Hamster IgG
Antibody Type:	Monoclonal
Formulation:	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide
Protein Concentration:	0.5 mg/mL
Storage&Handling:	The antibody solution should be stored between 2°C and 8°C
Isotype Controls:	300501
Antibody Family:	Mouse Antibodies
Storage & Handling:	The antibody solution should be stored between 2°C and 8°C
Isotype Control:	300501

BACKGROUND INFORMATION

Mouse T-cell receptor gamma delta (TCR γ/δ) is an antigen-recognition receptor expressed by γδ T lymphocytes, a distinct T-cell population involved in innate-like and adaptive immune responses. Unlike conventional αβ T cells, γδ T cells can recognize a range of cellular stress signals, microbial components, and tissue-associated antigens, often without requiring classical major histocompatibility complex (MHC) presentation. They contribute to immune surveillance, inflammation, tissue repair, and protection against infections, particularly at epithelial barriers such as the skin and intestinal mucosa.

The mouse TCR γ/δ complex is a heterodimer composed of one gamma (γ) chain and one delta (δ) chain, each containing variable and constant immunoglobulin-like domains. The chains are linked by disulfide bonds and associate with the CD3 signaling complex, which includes CD3γε, CD3δε, and CD3ζ chains. The variable regions are generated through somatic V(D)J gene rearrangement, producing diverse antigen-recognition specificities. TCR γ/δ is expressed on the cell surface as part of a larger receptor complex that transmits activation signals through CD3 immunoreceptor tyrosine-based activation motifs (ITAMs).

Unlike αβ TCRs, γδ TCR ligands are diverse and incompletely characterized. Depending on the γδ T-cell subset, recognized molecules may include stress-induced proteins, non-classical MHC-related molecules, and microbial antigens. Some mouse γδ T-cell

populations recognize butyrophilin-like molecules or other tissue-associated ligands, although ligand specificity varies substantially among subsets.

γδ T cells participate in host defense against bacterial, viral, and parasitic infections and contribute to tumor immunosurveillance. However, excessive or dysregulated γδ T-cell activity can also promote chronic inflammation, autoimmune pathology, or tumor progression in certain contexts. Therapeutically, γδ T cells are being investigated for cancer immunotherapy because of their potential to recognize and eliminate tumor cells without conventional MHC restriction. Strategies include adoptive γδ T-cell transfer, ex vivo expansion, and engineering γδ T cells with chimeric antigen receptors (CARs).

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