abcam

ab171110

FITC Anti-TCR gamma + TCR delta antibody [5A6.E91]

Anti-TCR gamma + TCR delta antibody [5A6.E91] conjugated to FITC - suitable for flow cytometry, and reacts with human samples. Clone [5A6.E91] is a mouse monoclonal antibody.

Design your panel with our interactive flow cytometry panel builder. Click here.

Key facts

Isotype	IgG1
Host species	Mouse
Conjugation	FITC
Excitation/Emission	Ex: 495nm, Em: 519nm
Storage buffer	Preservative: 0.1% Sodium azide Constituents: Glycerol (glycerin, glycerine), PBS, 0.5% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Full Length Protein corresponding to Human TRDC. The exact immunogen used to generate this antibody is proprietary information. Database link B7Z8K6
Clone number	5A6.E91
Purification technique	Affinity purification Protein A
Concentration	0.1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1/20
Notes	ab91356 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Target data

See full target information TRDC

Function	Constant region of T cell receptor (TR) delta chain that participates in the antigen recognition (PubMed:24600447). Gamma-delta TRs recognize a variety of self and foreign non-peptide antigens frequently expressed at the epithelial boundaries between the host and external environment, including endogenous lipids presented by MH-like protein CD1D and phosphoantigens presented by butyrophilin-like molecule BTN3A1. Upon antigen recognition induces rapid, innate-like immune responses involved in pathogen clearance and tissue repair (PubMed:23348415, PubMed:28920588). Binding of gamma-delta TR complex to antigen triggers phosphorylation of immunoreceptor tyrosine-based activation motifs (ITAMs) in the CD3 chains by the LCK and FYN kinases, allowing the recruitment, phosphorylation, and activation of ZAP70 that facilitates phosphorylation of the scaffolding proteins LCP2 and LAT. This lead to the formation of a supramolecular signalosome that recruits the phospholipase PLCG1, resulting in calcium mobilization and ERK activation, ultimately leading to T cell expansion and differentiation into effector cells (PubMed:25674089). Gamma-delta TRs are produced through somatic rearrangement of a limited repertoire of variable (V), diversity (D), and joining (J) genes. The potential diversity of gamma-delta TRs is conferred by the unique ability to rearrange (D) genes in tandem and to utilize all three reading frames. The combinatorial diversity is considerably increased by the sequence exonuclease trimming and random nucleotide (N) region additions which occur during the V-(D)-J rearrangements (PubMed:24387714).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot

Storage information	Avoid freeze / thaw cycle, Store in the dark

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The TCR gamma + TCR delta also known as gamma delta T-cell receptor is a part of the T-cell receptor (TCR) family. It has alternative names like gammadelta TCR or simply TCRδ/γ. The gamma and delta chains form a heterodimer that is part of the cell surface receptor complex. This complex is important for ligand recognition and immune response. The mass of the TCR gamma and TCR delta chains is not specified but they form between ZAP-70 and the CD3 complex on the surface of a subset of T-cells. These receptors are mainly expressed on gamma delta T-cells which are a minor population of T-cells in peripheral blood but more abundant in mucosal tissues and epithelial layers.
Biological function summary	TCR gamma and TCR delta are involved in recognizing antigens without presentation by major histocompatibility complex (MHC) molecules. The receptor complex allows these cells to respond to a diverse range of non-peptide antigens mostly derived from microbial origin including phosphoantigens and lipids. This enables gamma delta T-cells to bridge innate and adaptive immunity. They do not always require antigen processing and can recognize antigens directly contributing efficiently to immune surveillance and early response to infections and cellular stress.
Pathways	TCR gamma and TCR delta are important in the signaling networks that mediate immune responses. They are involved in pathways such as the nuclear factor of activated T-cells (NFAT) and mitogen-activated protein kinase (MAPK) pathways. These pathways promote the activation proliferation and differentiation of T-cells upon antigen recognition. The TCR complex including CD3 plays a role in these signal transduction events and ZAP-70 a protein tyrosine kinase is key for initiating these pathways upon TCR activation.
Associated diseases and disorders	Mutations or dysregulation in TCR gamma and TCR delta can lead to immune-related conditions. For example abnormalities in these receptors have been linked to autoimmune diseases such as celiac disease and multiple sclerosis. Their role in these disorders is related to faulty recognition and response to autoantigens leading to inappropriate immune responses. Additionally gamma delta T-cells and their receptors are of interest in cancer research as they participate in tumor immunosurveillance. Connections with molecules like CD3 and ZAP-70 facilitate ongoing exploration for therapeutic interventions targeting immune-related pathologies.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

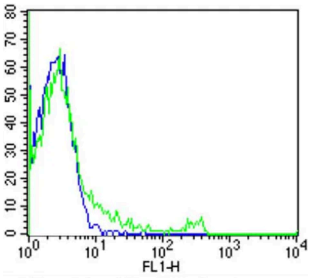
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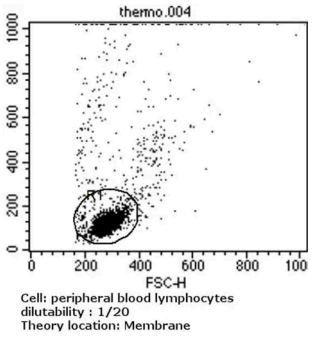
2 product images



Flow Cytometry - FITC Anti-TCR gamma + TCR delta antibody [5A6.E91] (ab171110)

TCR gamma + TCR delta Flow Cytometry staining using mouse Anti-TCR gamma + TCR delta antibody

Flow cytometry analysis of TCR gamma + TCR delta showing positive staining in the membrane of peripheral blood mononuclear cells compared to an isotype control (blue). Human blood was collected and combined with a hydrophilic polysaccharide then centrifuged. Samples transferred to a conical tube and washed with PBS. 50 ul of cell solution was added to each tube at a dilution of 2x10^7 cells/ml and 50 ul of isotype control and ab171110 at 1:20 added. Cells were incubated for 30 min at 4°C and washed with a cell buffer and incubated with a DyLight 488-conjugated goat anti-mouse IgG (H+L) secondary for 30 min at 4°C in the dark. FACS analysis was performed using 400 ul of cell buffer.



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