abcam

ab171113

Anti-TCR V delta 1 antibody [TS8.2]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.1% Sodium azide Constituents: 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	TS8.2
Purification technique	Affinity purification Protein G
Concentration	0.15 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	2 µg/ Test. ab170190 - 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

Supplementary info

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

Activity summary	The TCR V delta 1 or T-cell receptor Vδ1 is a subunit of the gamma-delta T-cell receptor complex. This protein is important in recognizing antigens that are not processed and presented by MHC complexes. TCR V delta 1 weighs around 60 kDa and is mainly expressed on a subset of gamma-delta T cells primarily in mucosal tissues like the skin intestines and lungs. These locations allow it to participate in immune surveillance and responses against pathogens and cancer cells.
Biological function summary	TCR V delta 1 is integral to the function of gamma-delta T cells which play a unique role in the immune response by recognizing stressed cells and presenting non-peptide antigens. Unlike alpha-beta T cells gamma-delta T cells often involving TCR V delta 1 do not require antigen presentation via MHC molecules. Therefore they can respond faster to certain pathological conditions. TCR V delta 1 pairs with the gamma chain in the receptor complex influencing the activation and proliferation of these T cells and modulating immune responses.
Pathways	TCR V delta 1 participates in key immune processes such as the recognition of phosphoantigens and stress-induced ligands through pathways like the Vδ1 T cell activation pathway and TCR signaling. The protein works closely with signaling molecules like CD3 and proteins in the MAPK pathway which together regulate gamma-delta T cell activation survival and cytokine production. Through these pathways TCR V delta 1 contributes to antitumor immunity and the maintenance of tissue homeostasis.
Associated diseases and disorders	TCR V delta 1 shows relevance in various conditions including cancer and autoimmune diseases. In some cancers like melanoma Vδ1 T cells through mechanisms related to TCR V delta 1 show potential in targeting and eliminating tumor cells. In autoimmune conditions such as celiac disease aberrant gamma-delta T cell responses can occur with TCR V delta 1 influencing the pathogenesis. Additionally interactions with proteins like NKG2D can influence these disease processes affecting how gamma-delta T cells either protect or exacerbate disease states.

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

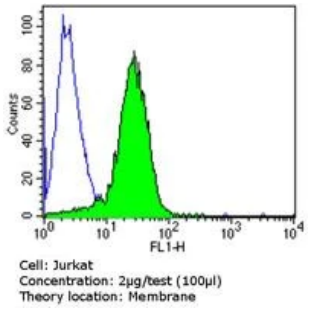
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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1 product image



Flow Cytometry - Anti-TCR V delta 1 antibody [TS8.2] (ab171113)

TCR V delta 1 Flow Cytometry staining using mouse Anti-TCR V delta 1 antibody

Flow cytometry analysis of TCR V delta 1 in Jurkat cells (green) compared to an isotype control (blue). Cells were harvested, adjusted to a concentration of 1-5x10^6 cells/ml, fixed with 2% paraformaldehyde and washed with PBS. Cells were blocked with a 2% solution of BSA-PBS for 30 min at room temperature and incubated with a TCR V delta 1 monoclonal antibody (ab171113) at a dilution of 2 ug/test for 60 min at room temperature. Cells were then incubated for 40 min at room temperature in the dark using a Dylight 488-conjugated goat anti-mouse IgG (H+L) secondary antibody and re-suspended in PBS for FACS analysis.

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