abcam

ab317064

Alexa Fluor® 488 Anti-TCR delta antibody [EPR27043-16]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 488
Excitation/Emission	Ex: 495nm, Em: 519nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR27043-16
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Transfected cell line - Human
Dilution info	-
Notes	-

Species	Human
Dilution info	1/500
Notes	-

ICC/IF

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Transfected cell line - Human
Dilution info	-
Notes	-

IHC-P

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Transfected cell line - Human
Dilution info	-
Notes	-

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

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

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Supplementary info

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

Activity summary	TCR delta also known as T cell receptor delta chain is a component of the T-cell receptor complex found on gamma delta T cells. It has a molecular weight of approximately 60 kDa. TCR delta is expressed mainly in the thymus peripheral blood and epithelium. In the structure of TCR the delta chain pairs with the gamma chain to form a distinct type of TCR which differs from the more familiar alpha-beta TCR found on most T cells.
Biological function summary	TCR delta contributes to the immune response through recognition of antigens presented by non-classical MHC molecules such as those on stressed infected or transformed cells. It is an important player in the immune system with its expression often associated with mechanisms of immune surveillance and defense. TCR delta is part of a complex with CD3 proteins which are necessary for signal transduction leading to T cell activation. This chain together with the gamma chain enables recognition of a wide array of antigens contributing to immunity beyond typical peptide-dominated responses.
Pathways	Gamma delta T cells act in the immune response by recognizing stress-induced molecules and initiating protective reactions. TCR delta participates in signaling pathways that control T cell development and maturation including the MAPK and NF-κB pathways. These pathways involve interactions with proteins such as ERK JNK and IκB playing roles in the expansion and functional capabilities of T cells. The ability to recognize non-peptide antigens through TCR delta makes these pathways distinct in comparison to those mediated by alpha-beta TCR.

Associated diseases and disorders	TCR delta has been associated with certain cancers and infectious diseases including tuberculosis. Gamma delta T cells with TCR delta exhibit cytotoxic activities against tumor cells and their infiltration can correlate with prognosis in cancer patients. Additionally the role of TCR delta in defense against infections involves interaction with other proteins such as heat shock proteins which are commonly expressed by infected cells. The activity of TCR delta in these contexts highlights its importance in immune regulation and potential as a target in therapeutic strategies.

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

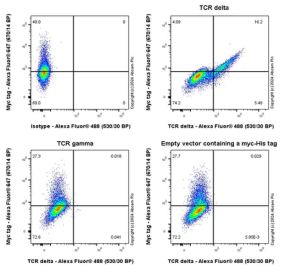
We do not recommend this combination. It is not covered by our product promise.

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.

Full details and terms and conditions can be found here:
Terms & Conditions.

3 product images

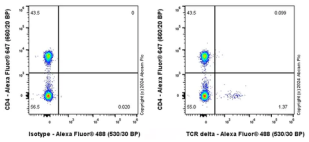


Flow Cytometry - Alexa Fluor® 488 Anti-TCR delta antibody [EPR27043-16] (ab317064)

TCR delta Flow Cytometry staining using rabbit Anti-TCR delta antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Isotype / 293T (human embryonic kidney epithelial cell) transfected with a TRDC (human TCR delta) protein expression vector containing a myc-His tag(Up Right) / 293T transfected with a TRGC1 protein (human TCR gamma) expression vector (Down Left) / 293T transfected with an empty vector containing a myc-His tag (Down Right) cells labelling TCR delta with ab317064 at 1/500 dilution

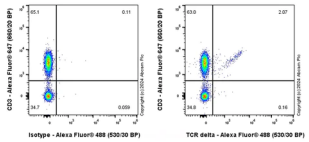
(0.1ug)/ Up Right, Down Left and Down Right compared with a Rabbit IgG monoclonal [EPR25A] - Isotype Control (Alexa Fluor® 488) (ab199091) / Left isotype control.



Flow Cytometry - Alexa Fluor® 488 Anti-TCR delta antibody [EPR27043-16] (ab317064)

Flow cytometric analysis of Human PBMC (human peripheral blood mononuclear cell) cells labelling TCR delta with ab317064 at 1/500 dilution (0.1ug)/ Right compared with a Rabbit IgG monoclonal [EPR25A] - Isotype Control (Alexa Fluor® 488) (ab199091) / Left isotype control.

Gated on viable cells. Cells were co-stained with anti-CD4 conjugated to Alexa Fluor® 647.



Flow Cytometry - Alexa Fluor® 488 Anti-TCR delta antibody [EPR27043-16] (ab317064)

Flow cytometric analysis of Human PBMC (human peripheral blood mononuclear cell) cells labelling TCR delta with ab317064 at 1/500 dilution (0.1ug)/ Right compared with a Rabbit IgG monoclonal [EPR25A] - Isotype Control (Alexa Fluor® 488) (ab199091) / Left isotype control.

Gated on viable cells. Cells were co-stained with anti-CD3 conjugated to Alexa Fluor® 647.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.