abcam

ab171088

Anti-TCR beta F1 antibody [8A3]

Anti-TCR beta F1 antibody [8A3] (ab171088) is a mouse monoclonal antibody detecting TCR beta F1 in **Western Blot, Flow Cytometry, IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse,**.

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 TRBV7-9. The exact immunogen used to generate this antibody is proprietary information. Database link P04435
Clone number	8A3
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

ICC/IF

Expected

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

IP

Expected

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

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Primates
Dilution info	-
Notes	-

WB

Expected

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

IHC-P

Expected

Species	Mouse, Primates, Human
Dilution info	Use at an assay dependent concentration.

Notes	-

Target data

See full target information TRBV7-9

Function	V region of the variable domain of T cell receptor (TR) beta chain that participates in the antigen recognition (PubMed:24600447). Alpha-beta T cell receptors are antigen specific receptors which are essential to the immune response and are present on the cell surface of T lymphocytes. Recognize peptide-major histocompatibility (MH) (pMH) complexes that are displayed by antigen presenting cells (APC), a prerequisite for efficient T cell adaptive immunity against pathogens (PubMed:25493333). Binding of alpha-beta TR to pMH complex initiates TR-CD3 clustering on the cell surface and intracellular activation of LCK that phosphorylates the ITAM motifs of CD3G, CD3D, CD3E and CD247 enabling the recruitment of ZAP70. In turn ZAP70 phosphorylates LAT, which recruits numerous signaling molecules to form the LAT signalosome. The LAT signalosome propagates signal branching to three major signaling pathways, the calcium, the mitogen-activated protein kinase (MAPK) kinase and the nuclear factor NF-kappa-B (NF-kB) pathways, leading to the mobilization of transcription factors that are critical for gene expression and essential for T cell growth and differentiation (PubMed:23524462). The T cell repertoire is generated in the thymus, by V-(D)-J rearrangement. This repertoire is then shaped by intrathymic selection events to generate a peripheral T cell pool of self-MH restricted, non-autoaggressive T cells. Post-thymic interaction of alpha-beta TR with the pMH complexes shapes TR structural and functional avidity (PubMed:15040585).

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

Notes

What is this antibody validated in?
Anti-TCR beta F1 antibody [8A3] (ab171088) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, samples.

Supplementary info

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

Activity summary	TCR beta F1 also known as T-cell receptor beta chain is a component of the T-cell receptor (TCR) complex. It plays a vital role in the immune response. The TCR beta F1 protein has a molecular mass of approximately 45 kDa. It is expressed on the surface of T lymphocytes which are white blood cells involved in the adaptive immune system. This protein is required for recognizing antigens presented by major histocompatibility complex (MHC) molecules on antigen-presenting cells.
Biological function summary	The TCR beta F1 chain forms part of the T-cell receptor complex which is necessary for T-cell activation. The complex also includes other components like TCR alpha chain and CD3 proteins. TCR beta F1 interacts with processed antigens bound to MHC molecules triggering intracellular signaling cascades. These cascades result in T-cell proliferation differentiation and cytokine release essential for the immune defense against pathogens and tumors.
Pathways	TCR beta F1 is central to the T-cell receptor signaling pathway. This pathway initiates after antigen recognition activating downstream signaling molecules such as ZAP70 and LCK. These molecules further propagate signals to pathways like the MAPK/ERK pathway influencing cell survival and proliferation. Additionally TCR beta F1 is part of the NFAT signaling pathway coordinating T-cell activation and cytokine gene transcription.
Associated diseases and disorders	TCR beta F1 has implications in autoimmune diseases and cancers. In autoimmune diseases like rheumatoid arthritis abnormal TCR signaling leads to excessive immune responses against self-antigens. In certain cancers such as leukemia altered TCR beta chain expressions contribute to uncontrolled T-cell proliferation. These conditions showcase the significant role of TCR beta F1 connecting to proteins like CD3 which also participate in these pathological processes.

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

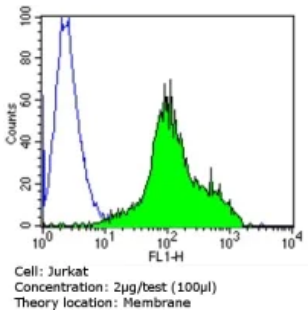
We do not recommend this combination. It is not covered by our product promise.

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 beta F1 antibody [8A3] (ab171088)

TCR beta F1 Flow Cytometry staining using mouse Anti-TCR beta F1 antibody

Flow cytometry analysis of TCR beta F1 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 beta F1 monoclonal antibody (ab171088) 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.

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