abcam

ab25010

FITC Anti-TCR alpha + TCR beta antibody [H57-597]

Anti-TCR alpha + TCR beta antibody [H57-597] conjugated to FITC - suitable for flow cytometry, and reacts with mouse samples. Clone [H57-597] is a Armenian Hamster monoclonal antibody and one of the most commonly used clones for flow cytometry.

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Key facts

Isotype	IgG
Host species	Armenian hamster
Conjugation	FITC
Excitation/Emission	Ex: 495nm, Em: 519nm
Storage buffer	pH: 7.2 Preservative: 0.09% Sodium azide Constituents: 0.87% Sodium chloride, 0.14% Sodium dihydrogen phosphate, 0.1% Gelatin
Form	Liquid
Clonality	Monoclonal
Immunogen	Native Full Length Protein corresponding to Mouse Trac. Database link P01849
Clone number	H57-597
Purification technique	Affinity purification
Specificity	Common epitope of the ß chain of the mouse aß T cell receptor (TCR) complex.
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from TCS

Reactivity data

Flow Cyt

Tested

Species	Mouse
Dilution info	-
Notes	-

Target data

See full target information Trac

Function	Constant region of T cell receptor (TR) alpha chain. 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. 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. 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.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze, Store undiluted

Notes

ab25010 can be used for in vitro stimulation of alpha beta TCR-expressing T cells and in vitro and in vivo depletion of aß TCR-bearing cells. Plate-bound or soluble ab25010 activates aß TCR bearing T cells.

Supplementary info

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

Activity summary	The T-cell receptor (TCR) alpha and TCR beta sometimes referred to as alpha beta TCR or alfa TCR are essential components of the immune response machinery. TCR alpha and beta chains each have a mass that varies between 30-40 kDa depending on the variable region's length. These receptor chains are expressed on the surface of T-cells more specifically on the vast majority of T lymphocytes and play a critical role in antigen recognition. Commercial names like anti-TCR or H57 might refer to antibodies targeting these chains.
Biological function summary	TCR alpha and beta chains form a heterodimeric complex with other important proteins like CD3 to transmit signals inside the T-cell upon antigen binding. This complex becomes active when T-cells recognize peptide antigens presented by major histocompatibility complex (MHC) molecules on antigen-presenting cells. The interaction between TCR and MHC-peptide complex initializes T-cell activation and subsequent immune responses being central to adaptive immunity.
Pathways	TCR alpha and beta are integral to the T-cell receptor signaling pathway. This pathway facilitates the activation of important transcription factors such as NF-kB and AP-1 which drive T-cell proliferation and differentiation. The signaling involves several other proteins such as protein kinase C theta and ZAP-70 which further propagate intracellular signaling cascades essential for a fully functional immune response.
Associated diseases and disorders	Mutations or malfunctions in TCR alpha and beta chains can associate with autoimmune disorders like rheumatoid arthritis and certain types of immunodeficiency. Rheumatoid arthritis involves aberrant TCR signaling pathways that result in inappropriate immune responses against self-antigens. In some immunodeficiencies defective TCR signaling impairs T-cell development and function potentially involving related proteins like CD3 and ZAP-70 leading to compromised immune defenses.

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.

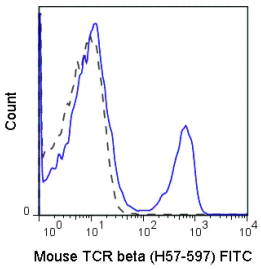
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1 product image



Flow Cytometry - FITC Anti-TCR alpha + TCR beta antibody [H57-597] (ab25010)

TCR alpha + TCR beta Flow Cytometry staining using armenian hamster Anti-TCR alpha + TCR beta antibody

Flow Cytometry analysis of C57Bl/6 splenocytes labeling TCR alpha + TCR beta with ab25010 at 0.25µg (solid line). Armenian hamster IgG (FITC) isotype control at 0.25µg (dashed line).

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