abcam

ab8090

Anti-CD3 antibody [MEM-57]

Lab Essentials

Key facts

Isotype	IgG2a
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.097% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Cell preparation containing CD3D protein. The exact immunogen used to generate this antibody is proprietary information. Database link P04234
Clone number	MEM-57
Purification technique	Affinity purification Protein A
Specificity	This antibody reacts with epsilon-gamma and epsilon-delta dimers of human CD3 complex, a part of a bigger multisubunit complex of the T cell receptor for antigen (CD3/TCR) expressed on peripheral blood T lymphocytes and mature thymocytes. It reacts more strongly with blood gamma-delta T lymphocytes than with alpha-beta T lymphocytes.
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	This product has been purified from tissue culture supernatant.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	2-5 µg/mL
Notes	ab170191 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

Target data

See full target information CD3D

Function	Part of the TCR-CD3 complex present on T-lymphocyte cell surface that plays an essential role in adaptive immune response. When antigen presenting cells (APCs) activate T-cell receptor (TCR), TCR-mediated signals are transmitted across the cell membrane by the CD3 chains CD3D, CD3E, CD3G and CD247/CD3Z. All CD3 chains contain immunoreceptor tyrosine-based activation motifs (ITAMs) in their cytoplasmic domain. Upon TCR engagement, these motifs become phosphorylated by Src family protein tyrosine kinases LCK and FYN, resulting in the activation of downstream signaling pathways (PubMed:2470098). In addition of this role of signal transduction in T-cell activation, CD3D plays an essential role in thymocyte differentiation. Indeed, participates in correct intracellular TCR-CD3 complex assembly and surface expression. In absence of a functional TCR-CD3 complex, thymocytes are unable to differentiate properly. Interacts with CD4 and CD8 and thus serves to establish a functional link between the TCR and coreceptors CD4 and CD8, which is needed for activation and positive selection of CD4 or CD8 T-cells (PubMed:12215456).

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

Activates T cells in vitro. This antibody is a highly effective immunosuppressive agent. In this it is similar to OKT3.

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

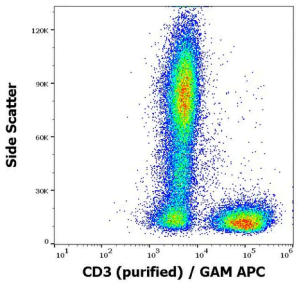
We do not recommend this combination. It is not covered by our product promise.

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.

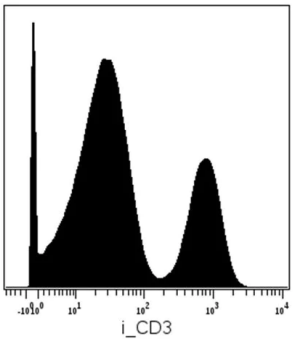
4 product images



Flow Cytometry - Anti-CD3 antibody [MEM-57] (ab8090)

CD3 Flow Cytometry staining using mouse Anti-CD3 antibody

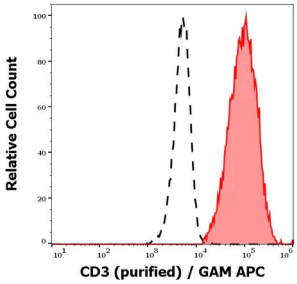
Flow cytometry analysis of human peripheral whole blood labeling CD3 with ab8090 at 0.33 µg/mL (GAM APC).



Flow Cytometry - Anti-CD3 antibody [MEM-57] (ab8090)

CD3 Flow Cytometry staining using mouse Anti-CD3 antibody

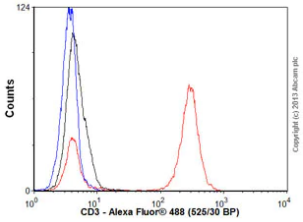
Surface staining (mass cytometry) of PBMC after Ficoll-Paque separation with anti-human CD3 (MEM-57) Dy161. Gated on singlets.



Flow Cytometry - Anti-CD3 antibody [MEM-57] (ab8090)

CD3 Flow Cytometry staining using mouse Anti-CD3 antibody

Flow cytometry analysis of human peripheral whole blood labeling CD3 with ab8090 at 0.33 µg/mL (GAM APC). Separation of human CD3 positive lymphocytes (red-filled) from neutrophil granulocytes (black-dashed).



Flow Cytometry - Anti-CD3 antibody [MEM-57] (ab8090)

CD3 Flow Cytometry staining using mouse Anti-CD3 antibody

Human peripheral blood lymphocytes stained with ab8090 (red line). Human whole blood was processed using a modified protocol based on Chow *et al*, 2005 (PMID: 16080188). In brief, human whole blood was fixed in 4% formaldehyde (methanol-free) for 10 min at 22°C. Red blood cells were then lyzed by the addition of Triton X-100 (final concentration - 0.1%) for 15 min at 37°C. For experimentation, cells were treated with 50% methanol (-20°C) for 15 min at 4°C. Cells were then incubated with the antibody (ab8090, 0.01µg/1x10^6 cells) for 30 min at 4°C. The secondary antibody used was Alexa Fluor® 488 goat anti-mouse IgG (H&L) (ab150113) at 1/2000 dilution for 30 min at 4°C. Isotype control antibody (black line) was mouse IgG2a [ICIGG2A] (ab91361, 0.1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >30,000 total events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. Gating strategy - peripheral blood lymphocytes.

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