

Alexa Fluor[®] 647 anti-mouse CD3 Antibody

Catalog# / Size	100209 / 100 µg
Clone	17A2
Regulatory Status	RUO
Other Names	T cell antigen receptor complex, T3
Isotype	Rat IgG2b, κ
Description	CD3, also known as T3, is a member of the Ig superfamily and primarily expressed on T cells, NK-T cells, and at different levels on thymocytes during T cell differentiation. CD3 is composed of CD3ε, δ, γ and ζ chains. It forms a TCR complex by associating with TCR α/β or γ/δ chains. CD3 plays a critical role in TCR signal transduction, T cell activation, and antigen recognition by binding the peptide/MHC antigen complex

Product Details

Verified Reactivity	Mouse
Antibody Type	Monoclonal
Host Species	Rat
Immunogen	γδTCR-positive T-T hybridoma D1
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography and conjugated with Alexa Fluor [®] 647 under optimal conditions.
Concentration	0.5 mg/mL
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Application	FC - Quality tested IHC-F, 3D IHC - Verified
Recommended Usage	Each lot of this antibody is quality control tested by immunofluorescent staining with flow cytometric analysis . For flow cytometric staining, the suggested use of this reagent is ≤ 0.25 µg per million cells in 100 µL volume. For immunohistochemistry on frozen tissue sections, a concentration range of 2.5 - 5.0 µg/mL is suggested. For 3D immunohistochemistry on formalin-fixed tissues, a concentration of 5.0 µg/mL is suggested. It is recommended that the reagent be titrated for optimal performance for each application.

* Alexa Fluor[®] 647 has a maximum emission of 668 nm when it is excited at 633 nm / 635 nm.

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Excitation Laser	Red Laser (633 nm)
Application Notes	Additional reported application (for relevant formats) include: spatial biology (IBEX) ^{1,2} .
Application References	1. Radtke AJ, <i>et al.</i> 2020. <i>Proc Natl Acad Sci U S A.</i> 117:33455-65. (SB) PubMed 2. Radtke AJ, <i>et al.</i> 2022. <i>Nat Protoc.</i> 17:378-401. (SB) PubMed

Product Citations	1. Sun L, <i>et al.</i> 2021. <i>Cancer Cell.</i> .: PubMed 2. Hiraoka N, <i>et al.</i> 2011. <i>Gastroenterology.</i> 140:310. PubMed 3. Lin YN, <i>et al.</i> 2022. <i>Oncoimmunology.</i> 11:2027136. PubMed 4. Otano I, <i>et al.</i> 2021. <i>Nat Commun.</i> 12:7296. PubMed 5. Baptista AP <i>et al.</i> 2019. <i>Immunity.</i> 50(5):1188-1201 . PubMed
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RRID AB_389323 (BioLegend Cat. No. 100209)

Antigen Details

Structure	Ig superfamily, CD3/TCR, 20 kD
Distribution	Thymocytes (differentiation dependent), mature T cells, NK-T cells
Function	Antigen recognition, TCR signal transduction, T cell activation
Ligand/Receptor	Peptide antigen/MHC-complex
Antigen References	<ol style="list-style-type: none"> 1. Barclay A, <i>et al.</i> 1997. <i>The Leukocyte Antigen FactsBook</i> Academic Press. 2. Davis MM. 1990. <i>Annu. Rev. Biochem.</i> 59:475. 3. Weiss A, <i>et al.</i> 1994. <i>Cell</i> 76:263.
Gene ID	12502

Related Protocols

[Cell Surface Flow Cytometry Staining Protocol](#)

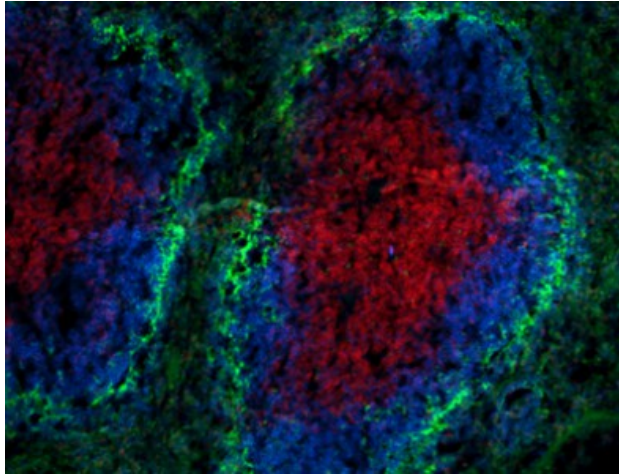
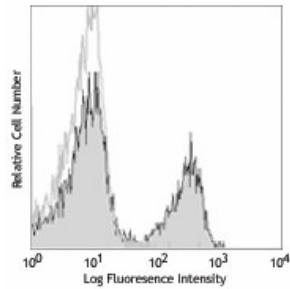
[Ce3D™ Tissue Clearing Kit](#)

Other Formats

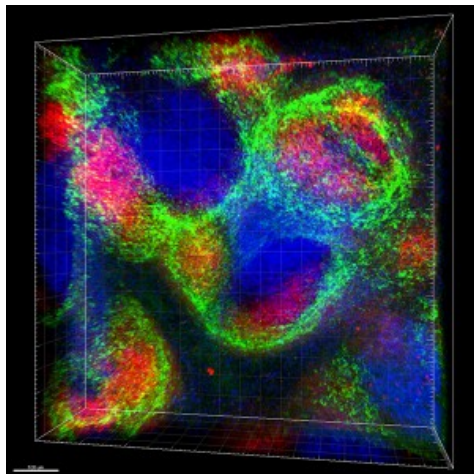
FITC anti-mouse CD3, PE anti-mouse CD3, Purified anti-mouse CD3, Alexa Fluor® 647 anti-mouse CD3, Alexa Fluor® 488 anti-mouse CD3, Pacific Blue™ anti-mouse CD3, Alexa Fluor® 700 anti-mouse CD3, PerCP/Cyanine5.5 anti-mouse CD3, PE/Cyanine7 anti-mouse CD3, APC/Cyanine7 anti-mouse CD3, Brilliant Violet 421™ anti-mouse CD3, Brilliant Violet 570™ anti-mouse CD3, Brilliant Violet 650™ anti-mouse CD3, Brilliant Violet 785™ anti-mouse CD3, Brilliant Violet 510™ anti-mouse CD3, APC anti-mouse CD3, Ultra-LEAF™ Purified anti-mouse CD3, Brilliant Violet 605™ anti-mouse CD3, Alexa Fluor® 594 anti-mouse CD3, Brilliant Violet 711™ anti-mouse CD3, Biotin anti-mouse CD3, PE/Dazzle™ 594 anti-mouse CD3, APC/Fire™ 750 anti-mouse CD3, Brilliant Violet 750™ anti-mouse CD3, TotalSeq™-A0182 anti-mouse CD3, TotalSeq™-B0182 anti-mouse CD3, Spark Blue™ 550 anti-mouse CD3, Spark NIR™ 685 anti-mouse CD3, TotalSeq™-C0182 anti-mouse CD3, APC/Fire™ 810 anti-mouse CD3, PE/Fire™ 640 anti-mouse CD3, Spark YG™ 570 anti-mouse CD3, PE/Fire™ 700 anti-mouse CD3, PE/Cyanine5 anti-mouse CD3, Spark Blue™ 574 anti-mouse CD3 Antibody, Spark Violet™ 423 anti-mouse CD3, PE/Fire™ 810 anti-mouse CD3, Spark Red™ 718 anti-mouse CD3

Product Data

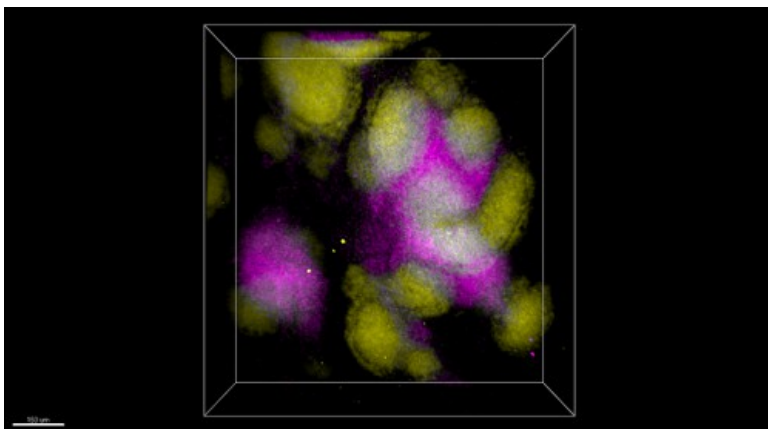
C57BL/6 mouse splenocytes stained with 17A2 Alexa Fluor® 647



Dissected C57/B6 mouse spleen was immersed in 4% paraformaldehyde (PFA) overnight followed by 30% sucrose immersion overnight and frozen in OCT. Frozen section was blocked with 5% FBS and 5% mouse serum for 30 minutes at room temperature. Then the tissue section was stained with 5 µg/mL of anti-mouse CD3 (clone 17A2) Alexa Fluor® 647 (red) and 5 µg/mL of anti-mouse B220 (clone RA3-6B2) Alexa Fluor® 594 (blue) and 5 µg/mL of anti-mouse CD169 (clone 3D6-112) Alexa Fluor® 488 (green) overnight at 4°C. The image was captured by 10X objective.



Formalin-fixed, 400 micron-thick mouse spleen section was blocked, permeabilized and stained overnight with CD21/35 (CR2/CR1)(clone 7E9) Alexa Fluor® 594 (red), CD169 (Siglec-1) (clone 3D6.112) Alexa Fluor® 488 (green), and CD3 (clone 17A2) Alexa Fluor® 647 (blue) all at 5 µg/mL, optically cleared, then analyzed at 235 µm imaging depth on a confocal microscope. Scale bar: 100 µm. [Watch the video.](#)



Paraformaldehyde-fixed (4%), 500 µm-thick mouse spleen section was processed according to the Ce3DTM Tissue Clearing Kit protocol (cat. no. 427701). The section was costained with anti-mouse CD37 Antibody (clone Duno85) Alexa Fluor® 594 at 5 µg/mL (yellow), and anti-mouse CD3 Antibody (clone 17A2) Alexa Fluor® 647 at 5 µg/mL (magenta). The section was then optically cleared and mounted in a sample chamber. The image was captured with a 10X objective using Zeiss 780 confocal microscope and processed by Imaris image analysis software. [Watch the video.](#)

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