

Ultra-LEAF™ Purified anti-mouse CD3ε Antibody

Catalog# / Size	100339 / 100 µg 100340 / 1 mg 100359 / 5 mg 100360 / 25 mg 100371 / 50 mg 100372 / 100 mg
Clone	145-2C11
Regulatory Status	RUO
Other Names	CD3ε, T3, CD3
Isotype	Armenian Hamster IgG
Description	CD3ε is a 20 kD transmembrane protein, also known as CD3 or T3. It 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. CD3ε forms a TCR complex by associating with the CD3δ, γ and ζ chains, as well as the 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	Armenian Hamster
Immunogen	H-2K ^b -specific mouse cytotoxic T lymphocyte clone BM10-37
Formulation	0.2 µm filtered in phosphate-buffered solution, pH 7.2, containing no preservative. Endotoxin level is <0.01 EU/µg of the protein (<0.001 ng/µg of the protein) as determined by the LAL test.
Preparation	The Ultra-LEAF™ (Low Endotoxin, Azide-Free) antibody was purified by affinity chromatography.
Concentration	The antibody is bottled at the concentration indicated on the vial, typically between 2 mg/mL and 3 mg/mL. Older lots may have also been bottled at 1 mg/mL. To obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C. This Ultra-LEAF™ solution contains no preservative; handle under aseptic conditions.
Application	FC - Quality tested IHC-F, IP, Activ, Block, WB, ICC - Reported in the literature, not verified in house
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 ≤1.0 µg per million cells in 100 µl volume or 100 µl of whole blood. It is recommended that the reagent be titrated for optimal performance for each application.
Application Notes	Clone 145-2C11 is useful for <i>in vitro</i> blocking of target-specific CTL-mediated cell lysis ¹ , as well as T cell activation assays, inducing proliferation and cytokine production ^{1,2,7,12,16} . It also induces apoptosis in immature thymocytes ³² , and <i>in vivo</i> T cell depletion ⁸⁻¹⁰ . Additional reported applications (for relevant formats of this clone) include: immunoprecipitation ¹ , immunohistochemical staining ^{14,15} of acetone-fixed frozen sections and zinc-fixed paraffin-embedded sections, Western blotting ⁴ , complement-mediated cytotoxicity ⁶ , <i>in vitro</i> and <i>in vivo</i> stimulation of T cells ^{1,2,7,12,16} , immunofluorescent staining ⁵ , and <i>in vivo</i> T cell depletion ⁸⁻¹⁰ . The 145-2C11 antibody has been reported to block the binding of 17A2 antibody to CD3 epsilon-specific T cells ¹¹ . Clone 145-2C11 is not recommended for formalin-fixed paraffin embedded sections. The LEAF™ purified antibody (Endotoxin <0.1 EU/µg, Azide-Free, 0.2 µm filtered) is recommended for functional assays (Cat. No. 100314). For <i>in vivo</i> studies or highly sensitive assays, we recommend Ultra-LEAF™ purified antibody (Cat. No. 100340) with a lower endotoxin limit than standard LEAF™ purified antibodies (Endotoxin <0.01 EU/µg).

Additional Product Notes

Get a 50% discount on this product when purchased in our Activation Bundles. Restrictions apply.

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Application References

(PubMed link indicates
BioLegend citation)

1. Leo O, *et al.* 1987. *P. Natl. Acad. Sci. USA* 84:1374. (IP, Activ, Block)
2. Kruisbeek AM, *et al.* 1991. *In Current Protocols in Immunology*. 3.12.1. (Activ)
3. Duke RC, *et al.* 1995. *Current Protocols in Immunology*. 3.17.1.
4. Salvadori S, *et al.* 1994. *J. Immunol.* 153:5176. (WB)
5. Payer E, *et al.* 1991. *J. Immunol.* 146:2536. (IF)
6. Jacobs H, *et al.* 1994. *Eur. J. Immunol.* 24:934. (CMCD)
7. Vossen ACTM, *et al.* 1995. *Eur. J. Immunol.* 25:1492. (Activ)
8. Henrickson M, *et al.* 1995. *Transplantation* 60:828. (Deplete)
9. Kinnaert P, *et al.* 1996. *Transpl. Int.* 9:386. (Deplete)
10. Han WR, *et al.* 1999. *Transpl. Immunol.* 7:207. (Deplete)
11. Miescher GC, *et al.* 1989. *Immunol. Lett.* 23:113. (Block)
12. Terrazas LI, *et al.* 2005. *Intl. J. Parasitology*. 35:1349. (Activ)
13. Ko SY, *et al.* 2005. *J. Immunol.* 175:3309.
14. Podd BS, *et al.* 2006. *J. Immunol.* 176:6532. (IHC-F)
15. Tilley SL, *et al.* 2007. *J. Immunol.* 178:3208. (IHC-F)
16. Wang W, *et al.* 2007. *J. Immunol.* 178:4885. (Activ)
17. Xiao S, *et al.* 2007. *J. Exp. Med.* 204:1691.
18. Chappaz S, *et al.* 2007. *Blood* doi:10.1182/blood-2007-02-074245. (FC) [PubMed](#).
19. Curtsinger JM, *et al.* 2005. *J. Immunol.* 175:4392. [PubMed](#)
20. Guo Y, *et al.* 2008. *Blood* 112:480. [PubMed](#)
21. Kenna TJ, *et al.* 2008. *Blood* 111:2091.
22. Perchonock CE, *et al.* 2007. *J. Immunol.* 179:1768. [PubMed](#)
23. Perchonock GE, *et al.* 2006. *Mol. Cell. Biol.* 26:6005. [PubMed](#)
24. Kanaya T, *et al.* 2008. *Am. J. Physiol. Gastrointest. Liver Physiol.* 295:G273. [PubMed](#)
25. de Koning BA, *et al.* 2006. *Int. Immunol.* 18:941. [PubMed](#)
26. Schulteis RD, *et al.* 2008. *Blood* 295:G273. [PubMed](#)
27. Qi Q, *et al.* 2009. *Blood* 114:564. [PubMed](#)
28. Helmersson S, *et al.* 2013. *Am J Pathol.* 9440:123. [PubMed](#)
29. Wu S, *et al.* 2014. *Clin Vaccine Immunol.* 21:156. [PubMed](#)
30. Yan J, *et al.* 2014. *Vaccine.* 32:2833. [PubMed](#)
31. Guiterrez DA, *et al.* 2014. *Diabetes.* 63:3827. [PubMed](#)
32. Shi YF, *et al.* 1991. *J Immunol.* 146:3340. (Apop)

Product Citations

1. Jairaman A, *et al.* 2021. *Bio Protoc.* 11:e4170. [PubMed](#)
2. Dong MB, *et al.* 2020. *Cell.* 178(5):1189-1204.e23. [PubMed](#)
3. Denk D, *et al.* 2022. *Immunity.* 55:2059. [PubMed](#)
4. Li Q, *et al.* 2022. *Cell Rep.* 40:111308. [PubMed](#)
5. Li X, *et al.* 2022. *Nat Commun.* 13:2794. [PubMed](#)
6. Qi Z, *et al.* 2022. *Nat Commun.* 13:182. [PubMed](#)
7. Duong-Ly KC, *et al.* 2018. *J Cell Sci.* 131:17. [PubMed](#)
8. Zhao X, *et al.* 2021. *Int J Oral Sci.* 13:31. [PubMed](#)
9. Wang W, *et al.* 2020. *Cell Rep.* 107936:32. [PubMed](#)
10. Gupta SS, *et al.* 2019. *Cell Rep.* 29:1862. [PubMed](#)
11. Donado CA, *et al.* 2020. *Cell Reports.* 31(1):107466. [PubMed](#)
12. Krone A, *et al.* 2022. *Sci Rep.* 218. [PubMed](#)
13. Menzel L, *et al.* 2021. *Cell Rep.* 37:109878. [PubMed](#)
14. Byun JK, *et al.* 2020. *Molecular Cell.* 80(4):592-606.e8. [PubMed](#)
15. Potluri HK, *et al.* 2022. *J Immunother Cancer.* 10. [PubMed](#)
16. Hayatsu N *et al.* 2017. *Immunity.* 47(2):268-283. [PubMed](#)
17. Mitchell JE, *et al.* 2021. *Cell Reports.* 35(2):108966. [PubMed](#)
18. Han C, *et al.* 2021. *Cell Reports.* 34(6):108706. [PubMed](#)
19. Dong L, *et al.* 2017. *Sci Rep.* 10.1038/srep36598. [PubMed](#)
20. Montes de Oca M, *et al.* 2020. *PLoS Pathog.* 16:e1008994. [PubMed](#)
21. Hoover DB, *et al.* 2020. *Int Immunopharmacol.* 106359:81. [PubMed](#)
22. Sekiya T *et al.* 2018. *Cell reports.* 24(6):1627-1638. [PubMed](#)
23. Pfenninger P, *et al.* 2022. *Front Immunol.* 13:777113. [PubMed](#)
24. Stump CT, *et al.* 2021. *Open Biol.* 11:210245. [PubMed](#)
25. Huang Y, *et al.* 2020. *FASEB J.* 34:1768. [PubMed](#)
26. Du Y, *et al.* 2022. *Nat Commun.* 13:231. [PubMed](#)
27. Cheng B, *et al.* 2022. *Cancer Commun (Lond).* 42:17. [PubMed](#)
28. Gudgeon N, *et al.* 2022. *Cell Rep.* 40:111193. [PubMed](#)
29. He Y, *et al.* 2021. *Cell Metabolism.* 33(5):988-1000.e7. [PubMed](#)
30. Codina A, *et al.* 2019. *Cell Syst.* 8:136. [PubMed](#)
31. Gandhi VD, *et al.* 2022. *J Clin Invest.* 132. [PubMed](#)
32. Herrera FG, *et al.* 2021. *Cancer Discov. Online ahead of print.* [PubMed](#)
33. Glassman CR, *et al.* 2021. *eLife.* 10:00. [PubMed](#)
34. Gurusamy M, *et al.* 2021. *Nat Commun.* 12:6798. [PubMed](#)
35. Saragovi A, *et al.* 2020. *Elife.* 9:00. [PubMed](#)
36. Han K, *et al.* 2021. *Nat Metab.* 3:318. [PubMed](#)
37. Frost JN, *et al.* 2021. *Med (N Y).* 2:164. [PubMed](#)
38. Daneshmandi S, *et al.* 2021. *Elife.* 10. [PubMed](#)
39. Glassman CR, *et al.* 2021. *Cell.* 184(4):983-999.e24. [PubMed](#)

40. Zhai X, *et al.* 2021. *Sci Adv.* 7:eabk0490. [PubMed](#)
41. Zhang R, *et al.* 2022. *Front Pharmacol.* 13:870848. [PubMed](#)
42. Yang BH, *et al.* 2020. *Cell Reports.* 27(12):3629-3645.e6.. [PubMed](#)
43. Takahashi F, *et al.* 2022. *iScience.* 25:104278. [PubMed](#)
44. Yuan X, *et al.* 2017. *Elife.* 6:e29540. [PubMed](#)
45. Minns D, *et al.* 2021. *Nat Commun.* 12:1285. [PubMed](#)
46. Wang D, *et al.* 2022. *EMBO Rep.* 23:e53691. [PubMed](#)
47. Daneshmandi S, *et al.* 2021. *Cell Reports.* 34(10):108831. [PubMed](#)
48. Woo MS, *et al.* 2021. *J Exp Med.* :218. [PubMed](#)
49. Xu Y, *et al.* 2021. *iScience.* 24:103445. [PubMed](#)
50. Smith KJ, *et al.* 2022. *PLoS Biol.* 20:e3001554. [PubMed](#)
51. Sobecki M, *et al.* 2022. *Cell Stem Cell.* 29:1459. [PubMed](#)
52. Yang X, *et al.* 2021. *Bioact Mater.* 3150:6. [PubMed](#)
53. Jain A, *et al.* 2020. *Nat Immunol.* 0.920138889. [PubMed](#)
54. Luo ZW, *et al.* 2021. *Int J Nanomedicine.* 16:2949. [PubMed](#)
55. Zhang Z, *et al.* 2021. *Front Immunol.* 12:699478. [PubMed](#)
56. Konishi Y, *et al.* 2018. *iScience.* 10:98. [PubMed](#)
57. Pandit M, *et al.* 2022. *Exp Mol Med.* 54:1214. [PubMed](#)
58. Guo Z, *et al.* 2022. *Neurobiol Pain.* 12:100096. [PubMed](#)
59. Okubo A, *et al.* 2021. *Int J Mol Sci.* 23:. [PubMed](#)
60. Liu Y, *et al.* 2021. *Nat Commun.* 12:6831. [PubMed](#)
61. Fujiwara Y, *et al.* 2021. *Nat Commun.* 12:5857. [PubMed](#)
62. Wang F, *et al.* 2021. *Nat Commun.* 12:1378. [PubMed](#)
63. Li X, *et al.* 2021. *Front Cell Dev Biol.* 9:647713. [PubMed](#)

RRID AB_11150783 (BioLegend Cat. No. 100339)
 AB_11149115 (BioLegend Cat. No. 100340)
 AB_2616673 (BioLegend Cat. No. 100359)
 AB_2616674 (BioLegend Cat. No. 100360)
 AB_2800555 (BioLegend Cat. No. 100371)
 AB_2800556 (BioLegend Cat. No. 100372)

Antigen Details

Structure	lg superfamily, forms CD3/TCR complex with CD3 δ , γ and ζ subunits and TCR (α/β and γ/δ), 20 kD
Distribution	Thymocytes (differentiation dependent), mature T cells, NK-T cells
Function	TCR signal transduction, T cell activation, antigen recognition
Ligand/Receptor	Peptide antigen/MHC-complex
Cell Type	NKT cells, T cells, Thymocytes, Tregs
Biology Area	Immunology
Molecular Family	CD Molecules, TCRs
Antigen References	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	12501

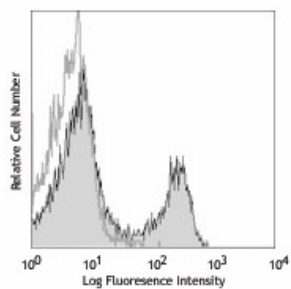
Related Protocols

[Cell Surface Flow Cytometry Staining Protocol](#)

Other Formats

APC anti-mouse CD3 ϵ , Biotin anti-mouse CD3 ϵ , FITC anti-mouse CD3 ϵ , PE anti-mouse CD3 ϵ , PE/Cyanine5 anti-mouse CD3 ϵ , Purified anti-mouse CD3 ϵ , PE/Cyanine7 anti-mouse CD3 ϵ , Alexa Fluor $\text{\textcircled{R}}$ 488 anti-mouse CD3 ϵ , Alexa Fluor $\text{\textcircled{R}}$ 647 anti-mouse CD3 ϵ , PerCP anti-mouse CD3 ϵ , PerCP/Cyanine5.5 anti-mouse CD3 ϵ , Purified anti-mouse CD3 ϵ (Maxpar $\text{\textcircled{R}}$ Ready), APC/Cyanine7 anti-mouse CD3 ϵ , Pacific Blue TM anti-mouse CD3 ϵ , Brilliant Violet 421 TM anti-mouse CD3 ϵ , Ultra-LEAF TM Purified anti-mouse CD3 ϵ , PE/Dazzle TM 594 anti-mouse CD3 ϵ , Brilliant Violet 510 TM anti-mouse CD3 ϵ , Brilliant Violet 605 TM anti-mouse CD3 ϵ , Brilliant Violet 711 TM anti-mouse CD3 ϵ , Brilliant Violet 785 TM anti-mouse CD3 ϵ , APC/Fire TM 750 anti-mouse CD3 ϵ , GolnVivo TM Purified anti-mouse CD3 ϵ , Spark YG TM 593 anti-mouse CD3

Product Data



C57BL/6 mouse splenocytes were stained with LEAF™ purified CD3e (clone 145-2C11) (filled histogram) or Armenian hamster IgG isotype control (open histogram), followed by anti-Armenian hamster IgG FITC.

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