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 *in vitro* 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 *in vivo* 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], *in vitro* and *in vivo* stimulation of T cells[1,2,7,12,16], immunofluorescent staining[5], and *in vivo* T cell depletion8-10. 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 *in vivo* 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. Learn more…

View more applications data for this product in our Scientific Poster Library.

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. *Diaebetes.* 63:3827. PubMed
32. Shi YF, *et al*. 1991. *J Immunol*. 146:3340. (Apop)

Product Citations

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

40. Yang BH, *et al.* 2020. Cell Reports. 27(12):3629-3645.e6.. PubMed
41. Zhai X, *et al.* 2021. Sci Adv. 7:eabk0490. PubMed
42. Zhang R, *et al.* 2022. Front Pharmacol. 13:870848. PubMed
43. Yuan X, *et al.* 2017. Elife. 6:e29540. PubMed
44. Takahashi F, *et al.* 2022. iScience. 25:104278. PubMed
45. Daneshmandi S, *et al.* 2021. Cell Reports. 34(10):108831. PubMed
46. Woo MS, *et al.* 2021. J Exp Med. :218. PubMed
47. Minns D, *et al.* 2021. Nat Commun. 12:1285. PubMed
48. Wang D, *et al.* 2022. EMBO Rep. 23:e53691. PubMed
49. Yang X, *et al.* 2021. Bioact Mater. 3150:6. PubMed
50. Xu Y, *et al.* 2021. iScience. 24:103445. PubMed
51. Smith KJ, *et al.* 2022. PLoS Biol. 20:e3001554. PubMed
52. Sobecki M, *et al.* 2022. Cell Stem Cell. 29:1459. PubMed
53. Jain A, *et al.* 2020. Nat Immunol. 0.920138889. PubMed
54. Konishi Y, *et al.* 2018. iScience. 10:98. PubMed
55. Luo ZW, *et al.* 2021. Int J Nanomedicine. 16:2949. PubMed
56. Zhang Z, *et al.* 2021. Front Immunol. 12:699478. 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	Ig superfamily, forms CD3/TCR complex with CD3δ, 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, *et al.* 1997. The Leukocyte Antigen FactsBook Academic Press. 2. Davis MM. 1990. *Annu. Rev. Biochem.* 59:475. 3. Weiss A, *et al.* 1994. *Cell* 76:263.
Gene ID	12501

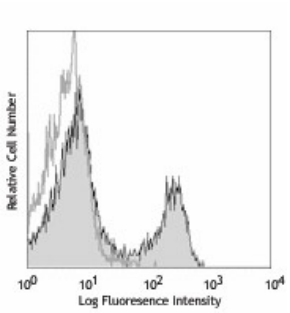
Related Protocols

Cell Surface Flow Cytometry Staining Protocol

Other Formats

APC anti-mouse CD3ε, Biotin anti-mouse CD3ε, FITC anti-mouse CD3ε, PE anti-mouse CD3ε, PE/Cyanine5 anti-mouse CD3ε, Purified anti-mouse CD3ε, PE/Cyanine7 anti-mouse CD3ε, Alexa Fluor® 488 anti-mouse CD3ε, Alexa Fluor® 647 anti-mouse CD3ε, PerCP anti-mouse CD3ε, PerCP/Cyanine5.5 anti-mouse CD3ε, Purified anti-mouse CD3ε (Maxpar® Ready), APC/Cyanine7 anti-mouse CD3ε, Pacific Blue™ anti-mouse CD3ε, Brilliant Violet 421™ anti-mouse CD3ε, Ultra-LEAF™ Purified anti-mouse CD3ε, PE/Dazzle™ 594 anti-mouse CD3ε, Brilliant Violet 510™ anti-mouse CD3ε, Brilliant Violet 605™ anti-mouse CD3ε, Brilliant Violet 711™ anti-mouse CD3ε, Brilliant Violet 785™ anti-mouse CD3ε, APC/Fire™ 750 anti-mouse CD3ε, GolnVivo™ Purified anti-mouse CD3ε, Spark YG™ 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.

BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587