

## Brilliant Violet 650™ anti-mouse CD4 Antibody

<b>Catalog# / Size</b>	100545 / 125 µL 100555 / 50 µg 100546 / 500 µL
<b>Clone</b>	RM4-5
<b>Regulatory Status</b>	RUO
<b>Other Names</b>	L3T4, T4
<b>Isotype</b>	Rat IgG2a, κ
<b>Description</b>	CD4 is a 55 kD protein also known as L3T4 or T4. It is a member of the Ig superfamily, primarily expressed on most thymocytes and a subset of T cells, and weakly on macrophages and dendritic cells. It acts as a co-receptor with the TCR during T cell activation and thymic differentiation by binding MHC class II and associating with the protein tyrosine kinase lck.

### Product Details

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<b>Verified Reactivity</b>	Mouse
<b>Antibody Type</b>	Monoclonal
<b>Host Species</b>	Rat
<b>Immunogen</b>	BALB/c mouse thymocytes
<b>Formulation</b>	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and BSA (origin USA).
<b>Preparation</b>	The antibody was purified by affinity chromatography and conjugated with Brilliant Violet 650™ under optimal conditions.
<b>Concentration</b>	µg sizes: 0.2 mg/mL µL sizes: lot-specific (to obtain lot-specific concentration, please enter the lot number in our <a href="#">Concentration and Expiration Lookup</a> or <a href="#">Certificate of Analysis</a> online tools.)
<b>Storage &amp; Handling</b>	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. <b>Do not freeze.</b>
<b>Application</b>	<a href="#">FC - Quality tested</a>
<b>Recommended Usage</b>	<p>Each lot of this antibody is quality control tested by <a href="#">immunofluorescent staining with flow cytometric analysis</a>. For immunofluorescent staining using the µg size, the suggested use of this reagent is ≤0.25 µg per million cells in 100 µl volume. For immunofluorescent staining using µl sizes, the suggested use of this reagent is 5 µl per million cells in 100 µl staining volume or 5 µl per 100 µl of whole blood. It is recommended that the reagent be titrated for optimal performance for each application.</p> <p>Brilliant Violet 650™ excites at 405 nm and emits at 645 nm. The bandpass filter 660/20 nm is recommended for detection, although filter optimization may be required depending on other fluorophores used. <b>Be sure to verify that your cytometer configuration and software setup are appropriate for detecting this channel.</b> Refer to your instrument manual or manufacturer for support. Brilliant Violet 650™ is a trademark of Sirigen Group Ltd.</p> <p><a href="#">Learn more about Brilliant Violet™.</a></p> <p>This product is subject to proprietary rights of Sirigen Inc. and is made and sold under license from Sirigen Inc. The purchase of this product conveys to the buyer a non-transferable right to use the purchased product for research purposes only. This product may not be resold or incorporated in any manner into another product for resale. Any use for therapeutics or diagnostics is strictly prohibited. This product is covered by U.S. Patent(s), pending patent applications and foreign equivalents.</p>
<b>Excitation Laser</b>	Violet Laser (405 nm)
<b>Application Notes</b>	The RM4-5 antibody blocks the binding of GK1.5 antibody and H129.19 antibody to CD4 <sup>+</sup> T cells,

but not RM4-4 antibody. Additional reported applications (for the relevant formats) include: blocking of ligand binding, *in vivo* depletion of CD4<sup>+</sup> cells<sup>1</sup>, and immunohistochemistry of acetone-fixed frozen tissue sections<sup>2,3,11</sup> and paraffin-embedded sections<sup>11</sup>. Clone RM4-5 is not recommended for immunohistochemistry of formalin-fixed paraffin sections. Instead, acetone frozen or zinc-fixed paraffin sections are recommended. The Ultra-LEAF™ Purified antibody (Endotoxin < 0.01 EU/μg, Azide-Free, 0.2 μm filtered) is recommended for functional assays (Cat. No. 100575 and 100576).

## Application References

(PubMed link indicates BioLegend citation)

1. Kruisbeek AM. 1991. *In Curr. Protocols Immunol.* pp. 4.1.1-4.1.5. (Block, Deplete)
2. Nitta H, *et al.* 1997. *Cell Vision* 4:73. (IHC)
3. Fan WY, *et al.* 2001. *Exp. Biol. Med.* 226:1045.
4. Muraille E, *et al.* 2003. *Infect. Immun.* 71:2704. (IHC)
5. León-Ponte M, *et al.* 2007. *Blood* 109:3139. (FC)
6. Bourdeau A, *et al.* 2007. *Blood* doi:10.1182/blood-2006-08-044370. (FC)
7. Matsumoto M, *et al.* 2007. *J. Immunol.* 178:2499. [PubMed](#)
8. Shigeta A, *et al.* 2008. *Blood* 112:4915. [PubMed](#)
9. Zaborsky N, *et al.* 2010. *J. Immunol.* 184:725. [PubMed](#)
10. Rodrigues-Manzanet R, *et al.* 2010. *P. Natl Acad Sci USA* 107:8706. [PubMed](#)
11. Whiteland JL, *et al.* 1995. *J. Histochem. Cytochem.* 43:313. (IHC)

## Product Citations

1. Wilden A, *et al.* 2022. *Front Immunol.* 13:991295. [PubMed](#)
2. Flamar AL, *et al.* 2020. *Immunity.* 52(4):606-619.e6. [PubMed](#)
3. Valladao A, *et al.* 2016. *J Immunol.* 197(12):4541-4551. [PubMed](#)
4. Moudra A, *et al.* 2021. *J Immunol.* 206:2109. [PubMed](#)
5. Nato G, *et al.* 2021. *Sci Rep.* 11:651. [PubMed](#)
6. Barry KC, *et al.* 2018. *Nat Med.* 24:1178. [PubMed](#)
7. Larsen SE, *et al.* 2021. *Sci Rep.* 11:9040. [PubMed](#)
8. Schmidleithner L *et al.* 2019. *Immunity.* 50(5):1232-1248. [PubMed](#)
9. Hering L, *et al.* 2021. *Int J Mol Sci.* 22: [PubMed](#)
10. Liu X, *et al.* 2021. *eLife.* 0.4166666666666667. [PubMed](#)
11. Li Y, *et al.* 2020. *Nat Commun.* 11:2781. [PubMed](#)
12. Kinsella S, *et al.* 2021. *Cell Rep.* 37:109789. [PubMed](#)
13. Du X, *et al.* 2018. *Proc Natl Acad Sci U S A.* 115:E11731. [PubMed](#)
14. Chen L, *et al.* 2020. *J Exp Med.* 217:00:00. [PubMed](#)
15. Li J, *et al.* 2020. *Cancer Discov.* [PubMed](#)
16. Klessing S, *et al.* 2020. *Vaccines (Basel).* 8: [PubMed](#)
17. Mrdjen D *et al.* 2018. *Immunity.* 48(2):380-395. [PubMed](#)
18. Li J, *et al.* 2020. *Cancer Immunol Res.* 0.529166667. [PubMed](#)
19. Grigoryan L, *et al.* 2022. *NPJ Vaccines.* 7:55. [PubMed](#)
20. Hossain DMS, *et al.* 2018. *J Clin Invest.* 128:644. [PubMed](#)
21. Li J, *et al.* 2018. *Immunity.* 49:178. [PubMed](#)
22. Shook BA, *et al.* 2020. *Cell Stem Cell.* 26(6):880-895. [PubMed](#)
23. Casulli J, *et al.* 2019. *Nat Commun.* 10:2121. [PubMed](#)
24. Horkova V, *et al.* 2020. *Cell Reports.* 30(5):1504-1514.e7. [PubMed](#)
25. Chen YG, *et al.* 2020. *Molecular Cell.* 76(1):96-109. [PubMed](#)
26. Ullrich L, *et al.* 2021. *Front Immunol.* 12:729607. [PubMed](#)
27. Sanmarco LM, *et al.* 2021. *Nature.* 590:473. [PubMed](#)
28. Liu C *et al.* 2019. *Immunity.* 51(2):381-397. [PubMed](#)
29. Blagih J, *et al.* 2020. *Cell Rep.* 30:481. [PubMed](#)
30. Koelwyn GJ, *et al.* 2020. *Nat Med.* 1452:26. [PubMed](#)
31. Waight JD, *et al.* 2018. *Cancer Cell.* 33:1033. [PubMed](#)
32. Wang G, *et al.* 2021. *Cell Host Microbe.* 29(5):777-791.e6. [PubMed](#)
33. Macal M *et al.* 2018. *Immunity.* 48(4):730-744. [PubMed](#)
34. Georgiadou A, *et al.* 2022. *Elife.* 11: [PubMed](#)
35. Tannig P, *et al.* 2020. *Vaccines (Basel).* 8: [PubMed](#)
36. Montalban-Arques A, *et al.* 2021. *Cell Host Microbe.* [PubMed](#)
37. Asadi Shahmirzadi A, *et al.* 2020. *Cell Metabolism.* 32(3):447-456.e6. [PubMed](#)
38. Tsyklauri O, *et al.* 2021. *EMBO Rep.* 22:e50785. [PubMed](#)
39. Scharschmidt TC, *et al.* 2017. *Cell Host Microbe.* 1.199305556. [PubMed](#)
40. Hering L, *et al.* 2020. *Front Immunol.* 1.747222222. [PubMed](#)
41. Teng F, *et al.* 2021. *Cell Rep.* 37:110051. [PubMed](#)
42. Schulze J, *et al.* 2021. *Stroke.* 52:2939. [PubMed](#)
43. Mathur AN, *et al.* 2019. *Immunity.* 50:655. [PubMed](#)
44. Parigger T, *et al.* 2021. *Int J Mol Sci.* 22: [PubMed](#)
45. Hester AK, *et al.* 2022. *Cell Rep.* 38:110363. [PubMed](#)
46. Louise V Webb *et al.* 2019. *Immunity.* 50(2):348-361. [PubMed](#)

## RRID

AB\_11126142 (BioLegend Cat. No. 100545)  
AB\_2562529 (BioLegend Cat. No. 100555)  
AB\_2562098 (BioLegend Cat. No. 100546)

## Antigen Details

### Structure

lg superfamily, 55 kD

<b>Distribution</b>	Majority of thymocytes, T cell subset
<b>Function</b>	TCR co-receptor, T cell activation
<b>Ligand/Receptor</b>	MHC class II molecule
<b>Cell Type</b>	Dendritic cells, T cells, Thymocytes, Tregs
<b>Biology Area</b>	Immunology
<b>Molecular Family</b>	CD Molecules
<b>Antigen References</b>	<ol style="list-style-type: none"> <li>1. Barclay A, <i>et al.</i> 1997. The Leukocyte Antigen FactsBook Academic Press.</li> <li>2. Bierer BE, <i>et al.</i> 1989. <i>Annu. Rev. Immunol.</i> 7:579.</li> <li>3. Janeway CA. 1992. <i>Annu. Rev. Immunol.</i> 10:645.</li> </ol>
<b>Gene ID</b>	<a href="#">12504</a>

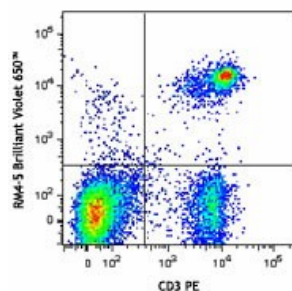
## Related Protocols

[Cell Surface Flow Cytometry Staining Protocol](#)

## Other Formats

APC anti-mouse CD4, Biotin anti-mouse CD4, FITC anti-mouse CD4, PE anti-mouse CD4, PE/Cyanine5 anti-mouse CD4, Purified anti-mouse CD4, PE/Cyanine7 anti-mouse CD4, APC/Cyanine7 anti-mouse CD4, Alexa Fluor® 647 anti-mouse CD4, Alexa Fluor® 488 anti-mouse CD4, Pacific Blue™ anti-mouse CD4, Alexa Fluor® 700 anti-mouse CD4, PerCP anti-mouse CD4, PerCP/Cyanine5.5 anti-mouse CD4, Brilliant Violet 421™ anti-mouse CD4, APC/Fire™ 750 anti-mouse CD4, Brilliant Violet 570™ anti-mouse CD4, Brilliant Violet 605™ anti-mouse CD4, Brilliant Violet 650™ anti-mouse CD4, Brilliant Violet 711™ anti-mouse CD4, Brilliant Violet 785™ anti-mouse CD4, Brilliant Violet 510™ anti-mouse CD4, Purified anti-mouse CD4 (Maxpar® Ready), PE/Dazzle™ 594 anti-mouse CD4, TotalSeq™-A0001 anti-mouse CD4, TotalSeq™-B0001 anti-mouse CD4, TotalSeq™-C0001 anti-mouse CD4, Ultra-LEAF™ Purified anti-mouse CD4, Spark Violet™ 423 anti-mouse CD4 (L3T4) Antibody

## Product Data



C57BL/6 mouse splenocytes were stained with CD3 PE and CD4 (clone RM4-5) Brilliant Violet 650™.

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