

Brilliant Violet 605™ anti-human CD8a Antibody

Catalog# / Size	301039 / 25 tests 301040 / 100 tests
Clone	RPA-T8
Regulatory Status	RUO
Workshop	IV T171
Other Names	T8, Leu2
Isotype	Mouse IgG1, κ
Description	CD8a is a 32-34 kD type I glycoprotein. It forms a homodimer (CD8a/a) or heterodimer (CD8a/b) with CD8b. CD8, also known as T8 and Leu2, is a member of the immunoglobulin superfamily found on the majority of thymocytes, a subset of peripheral blood T cells, and NK cells (which express almost exclusively CD8a homodimers). CD8 acts as a co-receptor with MHC class I-restricted T cell receptors in antigen recognition and T cell activation, and has been shown to play a role in thymic differentiation. Two domains in CD8a are important for function: the extracellular IgSF domain binds the α3 domain of MHC class I and the cytoplasmic CXCP motif binds the tyrosine kinase p56 Lck.

Product Details

Verified Reactivity	Human, Cynomolgus, Rhesus
Reported Reactivity	Chimpanzee, Baboon, Pigtailed Macaque, Sooty Mangabey
Antibody Type	Monoclonal
Host Species	Mouse
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and BSA (origin USA).
Preparation	The antibody was purified by affinity chromatography and conjugated with Brilliant Violet 605™ under optimal conditions.
Concentration	Lot-specific (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, and protected from prolonged exposure to light. Do not freeze.
Application	FC - Quality tested
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 5 µl per million cells in 100 µl staining volume or 5 µl per 100 µl of whole blood. Brilliant Violet 605™ excites at 405 nm and emits at 603 nm. The bandpass filter 610/20 nm is recommended for detection, although filter optimization may be required depending on other fluorophores used. Be sure to verify that your cytometer configuration and software setup are appropriate for detecting this channel. Refer to your instrument manual or manufacturer for support. Brilliant Violet 605™ is a trademark of Sirigen Group Ltd. Learn more about Brilliant Violet™. 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.
Excitation Laser	Violet Laser (405 nm)

Application Notes The RPA-T8 antibody does not block the binding of HIT8a antibody to CD8a. Additional reported applications of this antibody (for the relevant formats) include: immunohistochemical staining of paraformaldehyde-fixed frozen sections³ and costimulation of T cell responses⁴. This clone was tested in-house and does not work on formalin fixed paraffin-embedded (FFPE) tissue. The Ultra-LEAF™ purified antibody (Endotoxin <0.1 EU/μg, Azide-Free, 0.2 μm filtered) is recommended for functional assays (Cat. Nos. 301073 & 301074).

Application References

(PubMed link indicates BioLegend citation)

1. Knapp W, *et al.* Eds. 1989. Leucocyte Typing IV. Oxford University Press. New York.
2. Schlossman S, *et al.* Eds. 1995. Leucocyte Typing V. Oxford University Press. New York.
3. Mack CL, *et al.* 2004. *Pediatr. Res.* 56:79. (IHC)
4. Magidovich E, *et al.* 2007. *P. Natl. Acad. Sci. USA* 104:13022.
5. Thakral D, *et al.* 2008. *J. Immunol.* 180:7431. [PubMed](#)
6. Kmiecik M, *et al.* 2009. *J. Transl. Med.* 7:89. (FC) [PubMed](#)
7. Thakral D, *et al.* 2008. *J. Immunol.* 180:7431. (FC) [PubMed](#)
8. Yoshino N, *et al.* 2000. *Exp. Anim. (Tokyo)* 49:97. (FC)
9. Rout N, *et al.* 2010. *PLoS One* 5:e9787. (FC)
10. Stoeckius M, *et al.* 2017. *Nat. Methods.* 14:865. (PG)

Product Citations

1. Johnson L, Olson B, and McNeel D. 2017. *J Immunother Cancer.* 10.1186/s40425-017-0260-3. [PubMed](#)
2. Charpentier JC, *et al.* 2020. *Nat Commun.* 11:180. [PubMed](#)
3. Argüello RJ, *et al.* 2020. *Cell Metab.* 32:1063. [PubMed](#)
4. Jiguet-Jiglaire C, *et al.* 2022. *Acta Neuropathol Commun.* 10:1. [PubMed](#)
5. Zeng N, *et al.* 2022. *EMBO Rep.* 23:e53302. [PubMed](#)
6. Claiborne DT, *et al.* 2019. *PLoS Pathog.* 15:e1007981. [PubMed](#)
7. Johnson LE, *et al.* 2017. *J Immunother Cancer.* 5:56. [PubMed](#)
8. Woldemeskel BA, *et al.* 2020. *J Clin Invest.* 130:6631. [PubMed](#)
9. Barry KC, *et al.* 2018. *Nat Med.* 24:1178. [PubMed](#)
10. Cheng L, *et al.* 2021. *Cancer Immunol Immunother.* Online ahead of print. [PubMed](#)
11. Delacher M, *et al.* 2021. *Immunity.* 54(4):702-720.e17. [PubMed](#)
12. Tauriainen J, *et al.* 2017. *Sci Rep.* 7:40354. [PubMed](#)
13. Stevenson EM, *et al.* 2022. *Nat Commun.* 13:4888. [PubMed](#)
14. Dean JW, *et al.* 2020. *J Autoimmun.* 108:102417. [PubMed](#)
15. Sung BY, *et al.* 2022. *J Clin Invest.* 132:. [PubMed](#)
16. Briceño O, *et al.* 2016. *PLoS One.* 11:e0166496. [PubMed](#)
17. Naaber P, *et al.* 2022. *Cell Rep Med.* 3:100716. [PubMed](#)
18. Schommers P, *et al.* 2016. *J Virol.* 90: 7579 - 7586. [PubMed](#)
19. Kuebler P, *et al.* 2015. *Proc Natl Acad Sci U S A.* 112: 8379 - 8384. [PubMed](#)
20. Woldemeskel BA, *et al.* 2022. *J Clin Invest.* 132:. [PubMed](#)
21. Yarmarkovich M, *et al.* 2021. *Nature.* 599:477. [PubMed](#)
22. Yin W, *et al.* 2021. *Thorac Cancer.* 12:2680. [PubMed](#)
23. Lindestam Arlehamn CS, *et al.* 2019. *J Immunol.* 203:84. [PubMed](#)
24. Pinto-Cardoso S, *et al.* 2017. *Sci Rep.* 10.1038/srep43741. [PubMed](#)
25. Buggert M, *et al.* 2020. *Cell.* 183(7):1946-1961.e15. [PubMed](#)
26. Del Alcazar D, *et al.* 2019. *Cell Rep.* 28:3047. [PubMed](#)
27. Pombo C, *et al.* 2015. *J Infect Dis.* 12: 1376-1386. [PubMed](#)
28. Georg P, *et al.* 2022. *Cell.* 185:493. [PubMed](#)
29. Mujal AM, *et al.* 2022. *Cancer Immunol Res.* 10:403. [PubMed](#)
30. Dupraz L, *et al.* 2021. *Cell Reports.* 36(1):109332. [PubMed](#)
31. Claiborne D, *et al.* 2015. *Proc Natl Acad Sci U S A.* 112:1480. [PubMed](#)
32. Carter JA, *et al.* 2020. *Cell Systems.* 9(5):475-482.e4.. [PubMed](#)

RRID AB_11126985 (BioLegend Cat. No. 301039)
AB_2563185 (BioLegend Cat. No. 301040)

Antigen Details

Structure	Ig superfamily, homodimer or heterodimer with CD8β, 32-34 kD
Distribution	Majority of thymocytes, T cell subset, NK cells
Function	MHC class I co-receptor, thymic differentiation, T cell activation
Ligand/Receptor	MHC Class I molecules
Cell Type	Dendritic cells, NK cells, T cells, Thymocytes, Tregs
Biology Area	Immunology
Molecular Family	CD Molecules
Antigen References	1. Barclay N, <i>et al.</i> 1993. <i>The Leucocyte Antigen FactsBook.</i> Academic Press Inc. San Diego.
Gene ID	925

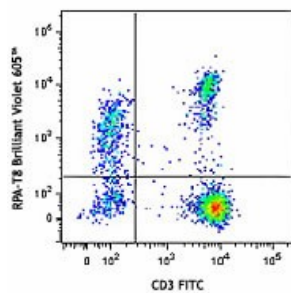
Related Protocols

[Cell Surface Flow Cytometry Staining Protocol](#)

Other Formats

APC anti-human CD8a, APC/Cyanine7 anti-human CD8a, Biotin anti-human CD8a, FITC anti-human CD8a, PE anti-human CD8a, PE/Cyanine5 anti-human CD8a, PE/Cyanine7 anti-human CD8a, Purified anti-human CD8a, Alexa Fluor® 488 anti-human CD8a, Alexa Fluor® 647 anti-human CD8a, Pacific Blue™ anti-human CD8a, Alexa Fluor® 700 anti-human CD8a, PerCP anti-human CD8a, PerCP/Cyanine5.5 anti-human CD8a, Brilliant Violet 421™ anti-human CD8a, Brilliant Violet 570™ anti-human CD8a, Brilliant Violet 605™ anti-human CD8a, Brilliant Violet 650™ anti-human CD8a, Brilliant Violet 711™ anti-human CD8a, Brilliant Violet 785™ anti-human CD8a, Brilliant Violet 510™ anti-human CD8a, Purified anti-human CD8a (Maxpar® Ready), Alexa Fluor® 594 anti-human CD8a, PE/Dazzle™ 594 anti-human CD8a, APC/Fire™ 750 anti-human CD8a, TotalSeq™-A0080 anti-human CD8a, TotalSeq™-B0080 anti-human CD8a, TotalSeq™-C0080 anti-human CD8a, Ultra-LEAF™ Purified anti-human CD8a, Spark Violet™ 423 anti-human CD8a Antibody

Product Data



Human peripheral blood lymphocytes were stained with CD3 FITC and CD8 (clone RPA-T8) Brilliant Violet 605™.

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