Brilliant Violet 421™ anti-human CD4 Antibody

Catalog# / Size	300531 / 25 tests 300532 / 100 tests
Clone	RPA-T4
Regulatory Status	RUO
Workshop	IV T114
Other Names	T4
Isotype	Mouse IgG1, κ
Description	CD4, also known as T4, is a 55 kD single-chain type I transmembrane glycoprotein expressed on most thymocytes, a subset of T cells, and monocytes/macrophages. CD4, a member of the Ig superfamily, recognizes antigens associated with MHC class II molecules, and participates in cell-cell interactions, thymic differentiation, and signal transduction. CD4 acts as a primary receptor for HIV, binding to HIV gp120. CD4 has also been shown to interact with IL-16.

Product Details

Verified Reactivity	Human
Reported Reactivity	Chimpanzee
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 421™ 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 ICC - 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 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. Brilliant Violet 421™ excites at 405 nm and emits at 421 nm. The standard bandpass filter 450/50 nm is recommended for detection. Brilliant Violet 421™ 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-T4 antibody binds to the D1 domain of CD4 (CDR1 and CDR3 epitopes) and can block HIV gp120 binding and inhibit syncytia formation. Additional reported applications (for the relevant formats) include: immunohistochemistry of acetone-fixed frozen sections[3,4,5], blocking of T cell activation[1,2], and spatial biology (IBEX)[10,11]. This clone was tested in-house and does not work on

formalin fixed paraffin-embedded (FFPE) tissue. The Ultra-LEAF™ purified antibody (Endotoxin < 0.01 EU/µg, Azide-Free, 0.2 µm filtered) is recommended for functional assays (Cat. No. 300569 - 300574).

Application References

(PubMed link indicates BioLegend citation)

1. Knapp W, *et al.* 1989. Leucocyte Typing IV. Oxford University Press. New York. (Activ)
2. Moir S, *et al.* 1999. *J. Virol.* 73:7972. (Activ)
3. Deng MC, *et al.* 1995. *Circulation* 91:1647. (IHC)
4. Friedman T, *et al.* 1999. *J. Immunol.* 162:5256. (IHC)
5. Mack CL, *et al.* 2004. *Pediatr. Res.* 56:79. (IHC)
6. Lan RY, *et al.* 2006. *Hepatology* 43:729.
7. Zenaro E, *et al.* 2009. *J. Leukoc. Biol.* 86:1393. (FC) PubMed
8. Yoshino N, *et al.* 2000. *Exp. Anim. (Tokyo)* 49:97. (FC)
9. Stoeckius M, *et al.* 2017. *Nat. Methods.* 14:865. (PG)
10. Radtke AJ, *et al.* 2020. *Proc Natl Acad Sci USA.* 117:33455-33465. (SB) PubMed
11. Radtke AJ, *et al.* 2022. *Nat Protoc.* 17:378-401. (SB) PubMed

Product Citations

1. Afshar M, *et al.* 2015. Alcohol. 49:57. PubMed
2. Nakano M, *et al.* 2021. Front Immunol. 12:713225. PubMed
3. Mastelic-Gavillet B, *et al.* 2019. J Immunother Cancer. 7:257. PubMed
4. Massafra V, *et al.* 2021. J Immunol. 207:493. PubMed
5. Pellett Madan R, *et al.* 2020. Clin Transplant. 34:e14021. PubMed
6. Mimitou EP, *et al.* 2021. Nat Biotechnol. 39:1246. PubMed
7. Kerstein A, *et al.* 2016. J Autoimmun. S0896-8411(16)30186-X. PubMed
8. Juno JA, *et al.* 2020. Nat Med. 26:1428. PubMed
9. Mederacke YS, *et al.* 2019. Sci Rep. 1.084027778. PubMed
10. Balle C, *et al.* 2022. J Clin Invest. :. PubMed
11. Vanuytsel K, *et al.* 2022. Nat Commun. 13:1103. PubMed
12. Cornelius C *et al.* 2016. EBioMedicine. 11:58-67 . PubMed
13. Pissani F, *et al.* 2018. J Virol. 92:e01143. PubMed
14. Moguche AO *et al.* 2017. Cell host & microbe. 21(6):695-706 . PubMed
15. Tai YT, *et al.* 2019. Leukemia. 33:426. PubMed
16. Chen Y, *et al.* 2021. Front Mol Biosci. 8:777370. PubMed
17. Sam J, *et al.* 2020. Front Oncol. 10:575737. PubMed

RRID

AB_10900084 (BioLegend Cat. No. 300531)
AB_10965645 (BioLegend Cat. No. 300532)

Antigen Details

Structure	Ig superfamily, type I transmembrane glycoprotein, 55 kD
Distribution	T cell subset, majority of thymocytes, monocytes/macrophages
Function	MHC class II co-receptor, lymphocyte adhesion, thymic differentiation, HIV receptor
Ligand/Receptor	MHC class II molecules, HIV gp120, IL-16
Cell Type	Dendritic cells, Macrophages, Monocytes, T cells, Thymocytes, Tregs
Biology Area	Immunology
Molecular Family	CD Molecules
Antigen References	1. Center D, *et al.* 1996. *Immunol. Today* 17:476. 2. Gaubin M, *et al.* 1996. *Eur. J. Clin. Chem. Clin. Biochem.* 34:723.
Gene ID	920

Related Protocols

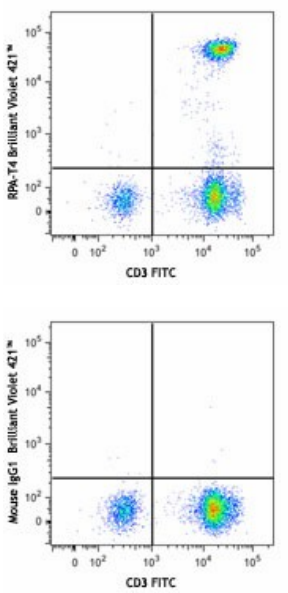
Cell Surface Flow Cytometry Staining Protocol

Other Formats

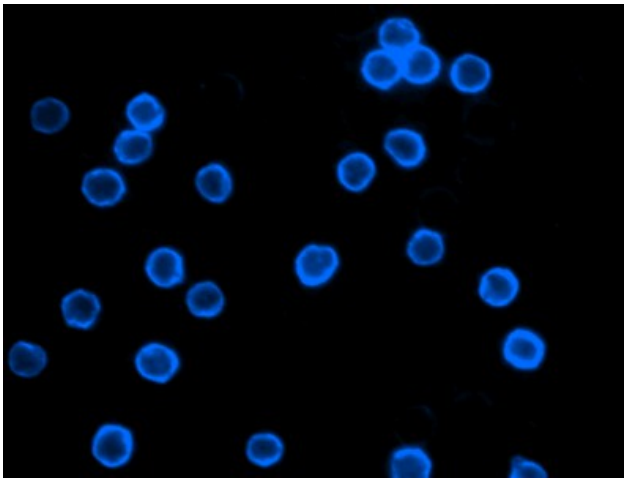
APC anti-human CD4, Biotin anti-human CD4, FITC anti-human CD4, PE anti-human CD4, PE/Cyanine5 anti-human CD4, PE/Cyanine7 anti-human CD4, Purified anti-human CD4, APC/Cyanine7 anti-human CD4, Alexa Fluor® 488 anti-human CD4, Alexa

Fluor® 647 anti-human CD4, Pacific Blue™ anti-human CD4, Brilliant Violet 421™ anti-human CD4, Alexa Fluor® 700 anti-human CD4, PerCP anti-human CD4, PerCP/Cyanine5.5 anti-human CD4, Brilliant Violet 570™ anti-human CD4, Brilliant Violet 650™ anti-human CD4, Purified anti-human CD4 (Maxpar® Ready), Alexa Fluor® 594 anti-human CD4, Brilliant Violet 510™ anti-human CD4, PE/Dazzle™ 594 anti-human CD4, Brilliant Violet 785™ anti-human CD4, Brilliant Violet 605™ anti-human CD4, Brilliant Violet 711™ anti-human CD4, APC/Fire™ 750 anti-human CD4, CD4 Fluorophore Sampler Kit, CD4 Fluorophore Sampler Kit with Veri-Cells™ PBMC, TotalSeq™-A0072 anti-human CD4, TotalSeq™-B0072 anti-human CD4, TotalSeq™-C0072 anti-human CD4, Ultra-LEAF™ Purified anti-human CD4, TotalSeq™-D0072 anti-human CD4

Product Data



Human peripheral blood lymphocytes were stained with CD3 FITC and CD4 (clone RPA-T4) Brilliant Violet 421™ (top) or mouse IgG1, κ Brilliant Violet 421™ isotype control (bottom).



Human peripheral mononuclear cells were fixed with 1% Paraformaldehyde (PFA), and then stained with 5 µg/ml of CD4 (clone RPA-T4) Brilliant Violet 421™ for 30 minutes at room temperature. The image was captured by 40X objective.

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