Brilliant Violet 421™ anti-human IL-4 Antibody

Catalog# / Size	500825 / 25 tests 500826 / 100 tests
Clone	MP4-25D2
Regulatory Status	RUO
Other Names	Interleukin-4, Ia inducing factor (IaIF), B-cell stimulating factor-1 (BSF-1), Hodgkin's cell growth factor (HCGF), Mast cell growth factor-2 (MCGF-2), Macrophage fusion factor (MFF), T cell growth factor-2 (TCGF-2)
Isotype	Rat IgG1, κ
Description	IL-4 is a pleiotropic cytokine that is produced by activated T cells, mast cells, and basophils. IL-4 elicits many different biological responses but has two dominant functions. The first is regulating differentiation of naïve $CD4^+$ T cell to the Th2 type. Th2 cells produce IL-4, IL-5, IL-10, and IL-13, which tend to favor a humoral immune response while suppressing a cell-mediated immune response controlled by Th1 cells. The second is regulating IgE and IgG1 production by B cells.

Product Details

Verified Reactivity	Human
Reported Reactivity	Pig, Rhesus
Antibody Type	Monoclonal
Host Species	Rat
Immunogen	CHO-expressed, recombinant human IL-4
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	ICFC - Quality tested
Recommended Usage	Each lot of this antibody is quality control tested by intracellular 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 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	**ELISA Detection[1,3] or ELISPOT Detection[4,5]:** The biotinylated MP4-25D2 antibody is useful as a detection antibody for a sandwich ELISA or ELISPOT assay, when used in conjunction with purified 8D4-8 antibody (Cat. No. 500702/500707) as the capture antibody.

Flow Cytometry[6,9]: The fluorochrome-labeled MP4-25D2 antibody is useful for intracellular immunofluorescent staining and flow cytometric analysis to identify IL-4 -producing cells within mixed cell populations.
Neutralization[1-3]: The LEAF™ purified antibody (Endotoxin <0.1 EU/µg, Azide-Free, 0.2 µm filtered) is recommended for neutralization of human IL-4 bioactivity (Cat. No. 500815). The MP4-25D2 antibody can neutralize the bioactivity of natural or recombinant IL-4.

Application References

1. Chretien I, *et al.* 1989. *J. Immunol. Methods* 117:67. (ELISA Detection, Neut)
2. Ramanathan L, *et al.* 1993. *Biochem.* 32:3549. (Neut)
3. Abrams J, *et al.* 1992. *Immunol. Rev.* 127:5. (ELISA Detection, Neut)
4. Mahanty S, *et al.* 1992. *J. Immunol.* 148:3567. (ELISPOT Detection)
5. Klinman D, *et al.* 1994. *Curr. Prot. Immunol.* John Wiley and Sons New York. Unit 6.19. (ELISPOT Detection)
6. Prussin C, *et al.* 1995. *J. Immunol. Methods* 188:117. (ICFC)
7. Raqib R, *et al.* 1995. *Infect. Immun.* 63:289.
8. Andersson J, *et al.* 1994. *Immunology* 83:16.
9. Iwamoto S, *et al.* 2007. *J. Immunol.* 179:1449. (ICFC) PubMed
10. Kubota M, *et al.* 1997. *J. Immunol.* 158:5321.
11. Dzhagalov I, *et al.* 2007. *J. Immunol.* 178:2113. PubMed
12. Kroneke MA, *et al.* 2012. *J. Immunol.* 188:3734. PubMed

Product Citations

1. Pachnio A, *et al.* 2016. PLoS Pathog. 12: 1005832. PubMed
2. Camiolo MJ, *et al.* 2021. Cell Reports. 35(2):108974. PubMed
3. Punik J, *et al.* 2021. Cell Reports. 35(13):109320. PubMed
4. Bal S, *et al.* 2016. Nat Immunol. 10.1038/ni.3444. PubMed
5. Kim ST, *et al.* 2021. J Immunother Cancer. 9:. PubMed
6. Vanderbeke L, *et al.* 2021. Nat Commun. 12:4117. PubMed

RRID

AB_10898316 (BioLegend Cat. No. 500825)
AB_2561679 (BioLegend Cat. No. 500826)

Antigen Details

Structure	Cytokine; 15-19 kD (Mammalian)
Bioactivity	Differentiation of naïve $CD4^+$ T cells to the T_H2 type, proliferation/differentiation of activated B cells, expression of class II MHC antigens, and of low affinity IgE receptors in resting B cells
Cell Sources	Mast cells, T cells, bone marrow stromal cells
Cell Targets	B cells, T cells, monocytes, endothelial cells, fibroblasts
Receptors	Heterodimer IL-4Rα (CD124); γ-subunit (CD132) in common with IL-2R, IL-7R, IL-13R, IL-15R
Cell Type	Tregs
Biology Area	Cell Biology, Immunology, Neuroinflammation, Neuroscience
Molecular Family	Cytokines/Chemokines
Antigen References	1. Fitzgerald K, *et al.* Eds. 2001. The Cytokine FactsBook. Academic Press San Diego. 2. Boulay J, *et al.* 1992. *Curr. Opin. Immunol.* 4:294. 3. Dullens H, *et al.* 1991. *In vivo* 5:567. 4. Paul W. 1991. *Blood* 77:1859.
Regulation	Upregulated by IL-2, platelet activating factor; downregulated by TGF-β
Gene ID	3565

Related Protocols

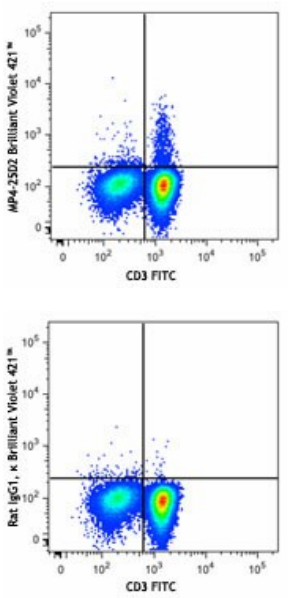
Surface and Intracellular Cytokine Staining for Flow Cytometry - Video

Intracellular Flow Cytometry Staining Protocol

Other Formats

APC anti-human IL-4, Biotin anti-human IL-4, FITC anti-human IL-4, PE anti-human IL-4, Purified anti-human IL-4, Alexa Fluor® 488 anti-human IL-4, Alexa Fluor® 647 anti-human IL-4, Brilliant Violet 421™ anti-human IL-4, PerCP/Cyanine5.5 anti-human IL-4, PE/Cyanine7 anti-human IL-4, Brilliant Violet 605™ anti-human IL-4, Purified anti-human IL-4 (Maxpar® Ready), PE/Dazzle™ 594 anti-human IL-4, APC/Cyanine7 anti-human IL-4, Brilliant Violet 510™ anti-human IL-4, Ultra-LEAF™ Purified anti-human IL-4

Product Data



Human peripheral blood lymphocytes were stimulated with PMA + ionomycin for 6 hours (in the presence of monensin), surface stained with CD3 FITC, fixed, permeabilized and then stained with IL-4 (clone MP4-25D2) Brilliant Violet 421™ (top) or rat IgG1, κ Brilliant Violet 421™ isotype control (bottom).

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