

Brilliant Violet 605™ anti-human IL-4 Antibody

Catalog# / Size	500827 / 25 tests 500828 / 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 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	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 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™.](#)

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Excitation Laser	Violet Laser (405 nm)
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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.
Neutralization¹⁻³: 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

(PubMed link indicates BioLegend citation)

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. Arlehamn C, *et al.* 2016. *PLoS Pathog.* 12: 1005760. [PubMed](#)
2. Bacher P *et al.* 2019. *Cell.* 176(6):1340-1355. [PubMed](#)
3. Gu C, *et al.* 2021. *Front Immunol.* 12:678036. [PubMed](#)
4. Harb H, *et al.* 2021. *Immunity.* 54(6):1186-1199.e7. [PubMed](#)
5. Faissner S, *et al.* 2022. *Front Immunol.* 13:980526. [PubMed](#)

RRID

AB_2562311 (BioLegend Cat. No. 500827)
AB_2563879 (BioLegend Cat. No. 500828)

Antigen Details

Structure	Cytokine; 15-19 kD (Mammalian)
Bioactivity	Differentiation of naïve CD4 ⁺ T cells to the T _H 2 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	<ol style="list-style-type: none">1. Fitzgerald K, <i>et al.</i> Eds. 2001. <i>The Cytokine FactsBook</i>. Academic Press San Diego.2. Boulay J, <i>et al.</i> 1992. <i>Curr. Opin. Immunol.</i> 4:294.3. Dullens H, <i>et al.</i> 1991. <i>In vivo</i> 5:567.4. Paul W. 1991. <i>Blood</i> 77:1859.
Regulation	Upregulated by IL-2, platelet activating factor; downregulated by TGF-β
Gene ID	3565

Related Protocols

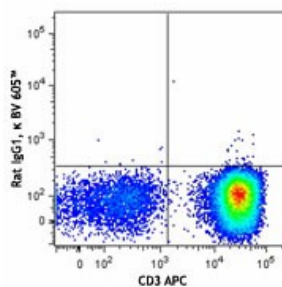
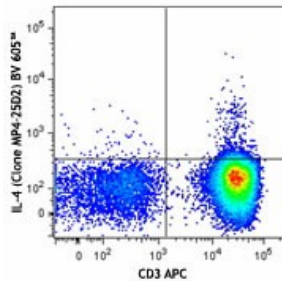
[Surface and Intracellular Cytokine Staining for Flow Cytometry - Video](#)

[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



PMA⁺ ionomycin-stimulated human peripheral blood lymphocytes (6 hours, in the presence of monensin) were surface stained with CD3 APC, fixed, permeabilized and then stained with IL-4 (clone MP4-25D2) Brilliant Violet 605™ (top) or rat IgG1, κ Brilliant Violet 605™ isotype control (bottom).

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