

Brilliant Violet 421™ anti-mouse IL-4 Antibody

| | |
|--------------------------|---|
| Catalog# / Size | 504119 / 125 µL 504127 / 50 µg 504120 / 500 µL |
| Clone | 11B11 |
| 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 produced by activated T cells, mast cells, and basophils. IL-4 is a potent lymphoid cell growth factor which stimulates the growth and activation of certain B cells and T cells. IL-4 is important for regulation of T helper subset development. |

Product Details

| | |
|-------------------------------|---|
| Verified Reactivity | Mouse |
| Antibody Type | Monoclonal |
| Host Species | Rat |
| Immunogen | Partially purified native mouse 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 | µg sizes: 0.2 mg/mL µL sizes: 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 | <p>Each lot of this antibody is quality control tested by intracellular immunofluorescent staining with flow cytometric analysis. 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 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.</p> <p>Learn more about Brilliant Violet™.</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> |
| Excitation Laser | Violet Laser (405 nm) |
| Application Notes | ELISA^{1,2,10,13} or ELISPOT⁵ Capture: The purified 11B11 antibody is useful as the capture antibody in a sandwich ELISA or ELISPOT assay, when used in conjunction with the biotinylated BVD6-24G2 antibody (Cat. No. 504202) as the detecting antibody and recombinant mouse IL-4 |

(Cat. No. 575609) as the standard. The LEAF™ purified antibody is suggested for ELISPOT capture.

Neutralization^{1-2,9,12}: The 11B11 antibody can neutralize the bioactivity of natural or recombinant IL-4. The LEAF™ purified antibody (Endotoxin <0.1 EU/μg, Azide-Free, 0.2 μm filtered) is recommended for neutralization of mouse IL-4 bioactivity *in vivo* and *in vitro* (Cat. No. 504108).

Additional reported applications (for the relevant formats) include: immunoprecipitation¹⁶, immunohistochemical staining of formalin-fixed paraffin-embedded tissue sections⁸ and paraformaldehyde-fixed, saponin-treated frozen tissue sections^{6,7}, and immunocytochemistry⁴.

Note: For testing mouse IL-4 in serum, plasma or supernatant, BioLegend's ELISA Max™ Sets (Cat. No. 431101 to 431106) are specially developed and recommended.

Application References

(PubMed link indicates BioLegend citation)

1. Shirai A, *et al.* 1994. *Cytokine* 6:329. (ELISA, Neut)
2. Abrams J. 1995. *Curr. Prot. Immunol.* John Wiley and Sons New York. Unit 6.20. (ELISA, Neut)
3. Assenmacher M, *et al.* 1994. *Eur. J. Immunol.* 24:1097.
4. Openshaw P, *et al.* 1995. *J. Exp. Med.* 182:1357. (ICC)
5. Klinman D, *et al.* 1994. *Curr. Prot. Immunol.* John Wiley and Sons New York. Unit 6.19. (ELISA Capture)
6. Litton M, *et al.* 1994. *J. Immunol. Methods* 175:47. (IHC)
7. Andersson U, *et al.* 1999. *Detection and quantification of gene expression.* New York:Springer-Verlag. (IHC)
8. Fan WY, *et al.* 2001. *Exp. Biol. Med.* 226:1045. (IHC)
9. Hara M, *et al.* 2001. *J. Immunol.* 166:3789. (Neut)
10. Dzhagalov I, *et al.* 2007. *J. Immunol.* 178:2113. (ELISA)
11. Lawson BR, *et al.* 2007. *J. Immunol.* 178:5366.
12. Wang W, *et al.* 2007. *J. Immunol.* 178:4885. (Neut)
13. Xu G, *et al.* 2007. *J. Immunol.* 179:5358. (ELISA) [PubMed](#)
14. Ohnmacht C, *et al.* 2008. *Blood* 113:2816. [PubMed](#)
15. Charles N, *et al.* 2010. *Nat. Med.* 16:701. (FC) [PubMed](#)
16. Zavorotinskaya T, *et al.* 2003. *Mol. Ther.* 7:155. (IP)

Product Citations

1. Komuczki J, *et al.* 2019. *Immunity.* 50:1289. [PubMed](#)
2. Vono M, *et al.* 2020. *Cell Reports.* 28(7):1773-1784.e5.. [PubMed](#)
3. Wilfahrt D, *et al.* 2021. *Elife.* 10:.. [PubMed](#)
4. Mikami Y, *et al.* 2021. *Immunity.* 54(3):514-525.e6. [PubMed](#)
5. Shi B, *et al.* 2018. *J Immunol.* 200:586. [PubMed](#)
6. Schmidleithner L *et al.* 2019. *Immunity.* 50(5):1232-1248 . [PubMed](#)
7. Yang J, *et al.* 2020. *Nature.* 586:572. [PubMed](#)
8. Lou Y, *et al.* 2021. *Int J Mol Sci.* 22:.. [PubMed](#)
9. He C, *et al.* 2022. *Nat Commun.* 13:5459. [PubMed](#)
10. Wang S, *et al.* 2022. *J Inflamm Res.* 14:7107. [PubMed](#)
11. Chao JL, *et al.* 2021. *Cell Rep Med.* 2:100399. [PubMed](#)

RRID

AB_10896945 (BioLegend Cat. No. 504119)
AB_2562594 (BioLegend Cat. No. 504127)
AB_2562102 (BioLegend Cat. No. 504120)

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 | Immunology |
| 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 | 16189 |

Related Protocols

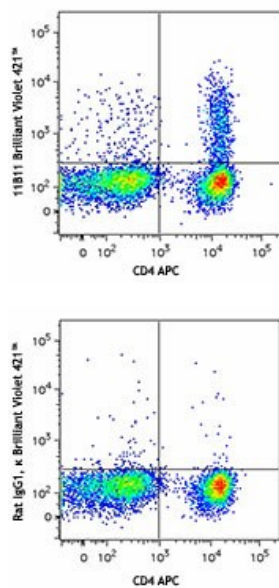
[Surface and Intracellular Cytokine Staining for Flow Cytometry - Video](#)

[Intracellular Flow Cytometry Staining Protocol](#)

Other Formats

APC anti-mouse IL-4, PE anti-mouse IL-4, Purified anti-mouse IL-4, Alexa Fluor® 488 anti-mouse IL-4, Alexa Fluor® 647 anti-mouse IL-4, PE/Cyanine7 anti-mouse IL-4, Brilliant Violet 421™ anti-mouse IL-4, Ultra-LEAF™ Purified anti-mouse IL-4, PerCP/Cyanine5.5 anti-mouse IL-4, Brilliant Violet 605™ anti-mouse IL-4, Purified anti-mouse IL-4 (Maxpar® Ready), PE/Dazzle™ 594 anti-mouse IL-4, Brilliant Violet 711™ anti-mouse IL-4, APC/Fire™ 750 anti-mouse IL-4

Product Data



PMA+ionomycin-stimulated (6 hours, in presence of brefeldin A) Th2-polarized C57BL/6 T cells were surface stained with CD4 APC and then intracellularly stained with IL-4 (clone 11B11) Brilliant Violet 421™ (top) or rat IgG1, κ Brilliant Violet 421™ isotype control (bottom).

For research use only. Not for diagnostic use. Not for resale. BioLegend will not be held responsible for patent infringement or other violations that may occur with the use of our products.

*These products may be covered by one or more Limited Use Label Licenses (see the BioLegend Catalog or our website, www.biolegend.com/ordering#license). BioLegend products may not be transferred to third parties, resold, modified for resale, or used to manufacture commercial products, reverse engineer functionally similar materials, or to provide a service to third parties without written approval of BioLegend. By use of these products you accept the terms and conditions of all applicable Limited Use Label Licenses. Unless otherwise indicated, these products are for research use only and are not intended for human or animal diagnostic, therapeutic or commercial use.

BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587