# Alexa Fluor® 488 anti-mouse IL-4 Antibody

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| **Catalog# / Size** | 504111 / 25 µg<br>504109 / 100 µg |
| **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

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| **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. |
| **Preparation** | The antibody was purified by affinity chromatography and conjugated with Alexa Fluor® 488 under optimal conditions. |
| **Concentration** | 0.5 mg/ml |
| **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 ≤ 0.25 µg per $10^6$ cells in 100 µl volume. It is recommended that the reagent be titrated for optimal performance for each application.<br><br>* Alexa Fluor® 488 has a maximum emission of 519 nm when it is excited at 488 nm.<br><br>Alexa Fluor® and Pacific Blue™ are trademarks of Life Technologies Corporation.<br><br>View full statement regarding label licenses |
| **Excitation Laser** | Blue Laser (488 nm) |
| **Application Notes** | **ELISA[1,2,10,13] or ELISPOT[5] 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.<br>**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).<br>**Additional reported applications (for the relevant formats) include:** immunoprecipitation[16], immunohistochemical staining of formalin-fixed paraffin-embedded tissue sections[8] and paraformaldehyde-fixed, saponin-treated frozen tissue sections[6,7], and immunocytochemistry[4].<br>**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. Sato K, *et al.* 2015. PLoS One. 10: 0138291. PubMed
2. Corbett KS, *et al.* 2020. Nature. 586:567. PubMed
3. Shimba A *et al.* 2018. Immunity. 48(2):286-298 . PubMed
4. Clancy–Thompson E, *et al.* 2019. EMBO J. 38:e101260. PubMed
5. Baptista AP *et al.* 2019. Immunity. 50(5):1188-1201 . PubMed


**RRID**

AB_493321 (BioLegend Cat. No. 504111)
AB_493320 (BioLegend Cat. No. 504109)

## 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**

Immunology

**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**

16189

## Related Protocols

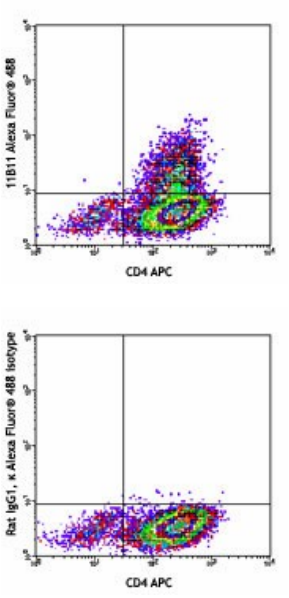
Intracellular Cytokine Staining Protocol - Video

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,

## 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 (11B11) Alexa Fluor® 488 (top) or rat IgG1, κ Alexa Fluor® 488 isotype control (bottom).



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