Brilliant Violet 421™ anti-mouse IFN-γ Antibody

Catalog# / Size	505829 / 125 µL 505830 / 50 µg
Clone	XMG1.2
Regulatory Status	RUO
Other Names	Interferon-γ, Immune interferon, Type II interferon, T cell interferon, Macrophage-activating factor (MAF)
Isotype	Rat IgG1, κ
Description	IFN-γ is a potent multifunctional cytokine which is secreted primarily by activated NK cells and T cells. Originally characterized based on anti-viral activities, IFN-γ also exerts anti-proliferative, immunoregulatory, and proinflammatory activities. IFN-γ can upregulate MHC class I and II antigen expression by antigen-presenting cells.

Product Details

Verified Reactivity	Mouse
Antibody Type	Monoclonal
Host Species	Rat
Immunogen	*E. coli*-expressed, recombinant mouse IFN-γ
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	Each lot of this antibody is quality control tested by immunofluorescent staining with flow cytometric analysis. For immunofluorescent staining using the µg size, the suggested use of this reagent is ≤0.1 µg per million cells in 100 µl volume. For immunofluorescent staining using the µl size, 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	**ELISA[1-4,11,14] or ELISPOT[5] Detection:** The biotinylated XMG1.2 antibody is useful as a detection antibody for a sandwich ELISA or ELISPOT assay, when used in conjunction with purified R4-6A2 antibody (Cat. No. 505702/505706) as the capture antibody and recombinant mouse IFN-? (Cat. No. 575309) as the standard.

ELISA or ELISPOT Capture: The purified XMG1.2 antibody is useful as a capture antibody for a sandwich ELISA or ELISPOT assay, when used in conjunction with biotinylated R4-6A2 antibody (Cat. No. 505704) as the detection antibody and recombinant mouse IFN-? (Cat. No. 575309) as the standard. The LEAF™ purified antibody is suggested for ELISPOT capture (Cat. No. 505812).
Flow Cytometry[7,8,12,13,16]: The fluorochrome-labeled XMG1.2 antibody is useful for intracellular immunofluorescent staining and flow cytometric analysis to identify IFN-?-producing cells within mixed cell populations.
Neutralization[1-3,9,10]: The XMG1.2 antibody can neutralize the bioactivity of natural or recombinant IFN-?. The LEAF™ purified antibody (Endotoxin <0.1 EU/µg, Azide-Free, 0.2 µm filtered) is recommended for neutralization of mouse IFN-? bioactivity *in vivo* and *in vitro* (Cat. No. 505812). For *in vivo* studies or highly sensitive assays, we recommend Ultra-LEAF™ purified antibody (Cat. No. 505834) with a lower endotoxin limit than standard LEAF™ purified antibodies (Endotoxin <0.01 EU/µg).
Additional reported applications (for the relevant formats) include: Western blotting, immunohistochemical staining of frozen tissue sections[6,22,23], and immunocytochemistry.
Note: For testing mouse IFN-? in serum, plasma or supernatant, BioLegend's ELISA Max™ Sets (Cat. No. 430801 to 430806) are specially developed and recommended.

Application References

1. Abrams J, *et al.* 1992. *Immunol. Rev.* 127:5. (ELISA, Neut)
2. Sander B, *et al.* 1993. *J. Immunol. Meth.* 166:201. (ELISA, Neut)
3. Abrams J, *et al.* 1995. *Curr. Prot. Immunol.* John Wiley and Sons, New York. Unit 6.20. (ELISA, Neut)
4. Yang X, *et al.* 1993. *J. Immunoassay* 14:129. (ELISA)
5. Klinman D, *et al.* 1994. *Curr. Prot. Immunol.* John Wiley and Sons, New York. Unit 6.19. (ELISPOT)
6. Sander B, *et al.* 1991. *Immunol. Rev.* 119:65. (IHC)
7. Ferrick D, *et al.* 1995. *Nature* 373:255. (FC)
8. Ko SY, *et al.* 2005. *J. Immunol.* 175:3309. (FC) PubMed
9. Peterson KE, *et al.* 2000. *J. Virol.* 74:5363. (Neut)
10. DeKrey GK, *et al.* 1998. *Infect. Immun.* 66:827. (Neut)
11. Dzhagalov I, *et al.* 2007. *J. Immunol.* 178:2113. (ELISA)
12. Lawson BR, *et al.* 2007. *J. Immunol.* 178:5366. (FC)
13. Lee JW, *et al.* 2006. *Nature Immunol.* 8:181. (FC) PubMed
14. Xu G, *et al.* 2007. *J. Immunol.* 179:5358. (ELISA) PubMed
15. Montfort M, *et al.*2004. *J. Immunol.* 173:4084. PubMed
16. Haring JS, *et al.* 2008. *J. Immunol.* 180:2855. (FC) PubMed
17. Jordan JM, *et al.* 2008. *Infect Immun.* 76:3717. PubMed
18. Tonkin DR, *et al.* 2008. *J. Immunol.* 181:4516. PubMed
19. Charles N, *et al.* 2010. *Nat. Med.* 16:701. (FC) PubMed
20. Cui Y, *et al.* 2009. *Invest. Ophth. Vis. Sci.* 50:5811. (FC) PubMed
21. Mykkanen OT, *et al.* 2014. *PLoS One.* 9:114790. PubMed
22. Yokogawa M, *et al*. 2013. *Mol. Carcinog*. 52:760. (IHC)
23. Mottram PL, *et al*. 1998. *J Immunol*. 161:602. (IHC)

Product Citations

1. Lee J, *et al.* 2007. Nat Immunol. 8:181. PubMed
2. Bunn P, *et al.* 2014. J Immunol. 192:3709. PubMed
3. Luck H, *et al.* 2015. Cell Metab. 21 527 . PubMed
4. Montes de Oca M, *et al.* 2016. PLoS Pathog. 12: 1005398. PubMed
5. Yang E, *et al.* 2016. J Immunol. 197: 934 - 941. PubMed
6. Sebina I, *et al.* 2016. PLoS Pathog. 12:e1005999. PubMed
7. Harsha Krovi S, *et al.* 2020. Nat Commun. 4.790277778. PubMed
8. Soon MSF, *et al.* 2020. Nat Immunol. 1.984027778. PubMed
9. Webb LM, *et al.* 2020. J Clin Invest. 130:1683. PubMed
10. Gruber T, *et al.* 2020. JCI Insight. 5:00. PubMed
11. Gajdasik DW, *et al.* 2020. Nat Commun. 2.834027778. PubMed
12. Weulersse M, *et al.* 2020. Immunity. 53(4):824-839.e10. PubMed
13. Yu M, *et al.* 2021. Molecular Cell. 81(6):1216-1230.e9. PubMed
14. Peng Z, *et al.* 2021. STAR Protocols. 2(2):100595. PubMed
15. Bankoti R, *et al.* 2017. Sci Rep. 10.1038/s41598-017-12171-3. PubMed
16. Tsai S, *et al.* 2018. Cell Metab. 28:922. PubMed
17. Novince CM, *et al.* 2017. Sci Rep. 7:5747. PubMed
18. Perrot I *et al.* 2019. Cell Rep. 27(8):2411-2425 . PubMed
19. Page N, *et al.* 2018. Immunity. 48:937. PubMed
20. Luck H, *et al.* 2019. Nat Commun. 10:3650. PubMed
21. Clancy–Thompson E, *et al.* 2019. EMBO J. 38:e101260. PubMed
22. Ying Zhang *et al.* 2017. Cancer cell. 32(3):377-391 . PubMed
23. Singer M *et al.* 2016. Cell. 166(6):1500-1511 . PubMed
24. Wang X, *et al.* 2019. Cell Res. 29:787. PubMed
25. Rao TN, *et al.* 2020. J Immunol. 204:2600. PubMed
26. Runge EM, *et al.* 2020. J Neuroinflammation. 17:121. PubMed
27. Quatrini L, *et al.* 2018. Nat Immunol. 19:954. PubMed
28. Wang J, *et al.* 2020. J Hematol Oncol. 0.610416667. PubMed
29. Liu S, *et al.* 2020. Cell Host & Microbe. 26(6):779-794.e8.. PubMed
30. Lian J, *et al.* 2020. Cell Reports. 31(8):107679. PubMed
31. Montfort M, *et al.* 2004. J Immunol. 173:4084. PubMed

RRID

AB_10897937 (BioLegend Cat. No. 505829)

AB_2563105 (BioLegend Cat. No. 505830)

Antigen Details

Structure	Cytokine; dimer; 40-80 kD (Mammalian)
Bioactivity	Antiviral/antiparasitic activities; inhibits proliferation; enhances MHC class I and II expression on APCs
Cell Sources	$CD8^+$ and $CD4^+$ T cells, NK cells
Cell Targets	T cells, B cells, macrophages, NK cells, endothelial cells, fibroblasts
Receptors	IFN-γRα (CDw119) dimerized with IFN-γRβ (AF-1)
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. De Maeyer E, *et al.* 1992. *Curr. Opin. Immunol.* 4:321. 3. Farrar M, *et al.* 1993. *Annu. Rev. Immunol.* 11:571. 4. Gray P, *et al.* 1987. *Lymphokines* 13:151.
Regulation	Upregulated by IL-2, FGF-basic, EGF; downregulated by 1-α-25-Dihydroxy vitamin D3, dexamethasone
Gene ID	15978

Related Protocols

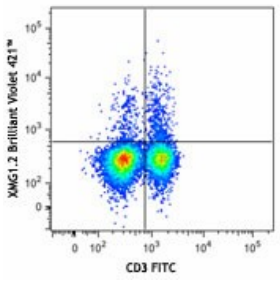
Intracellular Cytokine Staining Protocol - Video

Intracellular Flow Cytometry Staining Protocol

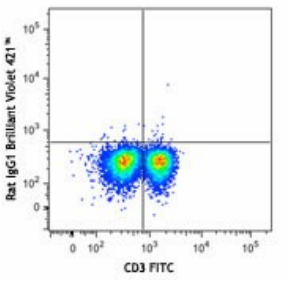
Other Formats

APC anti-mouse IFN-γ, Biotin anti-mouse IFN-γ, FITC anti-mouse IFN-γ, PE anti-mouse IFN-γ, Purified anti-mouse IFN-γ, Alexa Fluor® 488 anti-mouse IFN-γ, Alexa Fluor® 647 anti-mouse IFN-γ, Pacific Blue™ anti-mouse IFN-γ, PerCP/Cyanine5.5 anti-mouse IFN-γ, PE/Cyanine7 anti-mouse IFN-γ, Brilliant Violet 421™ anti-mouse IFN-γ, Brilliant Violet 650™ anti-mouse IFN-γ, Ultra-LEAF™ Purified anti-mouse IFN-γ, Brilliant Violet 711™ anti-mouse IFN-γ, Brilliant Violet 785™ anti-mouse IFN-γ, Brilliant Violet 605™ anti-mouse IFN-γ, Brilliant Violet 510™ anti-mouse IFN-γ, Purified anti-mouse IFN-γ (Maxpar® Ready), PE/Dazzle™ 594 anti-mouse IFN-γ, Alexa Fluor® 700 anti-mouse IFN-γ, APC/Cyanine7 anti-mouse IFN-γ, GoInVivo™ Purified anti-mouse IFN-γ, APC/Fire™ 750 anti-mouse IFN-γ, Spark NIR™ 685 anti-mouse IFN-γ

Product Data



C57BL/6 mouse splenocytes were stimulated with PMA + Ionomycin for 6 hours (in the presence of monensin), stained with CD3 FITC, fixed, permeabilized, and then stained with IFN-γ (clone XMG1.2) Brilliant Violet 421™ (top) or rat IgG1, κ Brilliant Violet 421™ 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