Brilliant Violet 421™ anti-mouse F4/80 Antibody

Catalog# / Size	123131 / 125 µL 123137 / 50 µg 123132 / 500 µL
Clone	BM8
Regulatory Status	RUO
Other Names	EMR1, Ly71
Isotype	Rat IgG2a, κ
Description	F4/80 is a 160 kD glycoprotein. It is characterized as a member of the epidermal growth factor (EGF)-transmembrane 7 (TM7) family. F4/80, also known as EMR1 or Ly71, has been widely used as a murine macrophage marker, which is expressed on the majority of tissue macrophages including peritoneal macrophages, macrophages in lung, gut, thymus and red pulp of spleen (but not on the macrophages located in T cell areas of the spleen, lymph node and Peyer's patch), Kuffer cells, Langerhans cells, and bone marrow stromal cells. F4/80 has also been shown on a subset of dendritic cells. The biological ligand of F4/80 has not been identified, but it has been reported that F4/80 is required for induction of $CD8^+$ T cells-mediated peripheral tolerance.

Product Details

Verified Reactivity	Mouse
Antibody Type	Monoclonal
Host Species	Rat
Immunogen	Murine macrophages
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	FC - Quality tested IHC-F - Verified SB - Reported in the literature, not verified in house
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 ≤0.25 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. For immunohistochemical staining on frozen tissue sections, the suggested use of this reagent is 2.0 µg/ml. 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

Additional reported applications (for the relevant formats) include: immunohistochemical staining of acetone-fixed frozen sections[1,2] and formalin-fixed paraffin-embedded sections[6,7], Western blotting, and spatial biology (IBEX)[12,13].

Additional Product Notes

Iterative Bleaching Extended multi-pleXity (IBEX) is a fluorescent imaging technique capable of highly-multiplexed spatial analysis. The method relies on cyclical bleaching of panels of fluorescent antibodies in order to image and analyze many markers over multiple cycles of staining, imaging, and, bleaching. It is a community-developed open-access method developed by the Center for Advanced Tissue Imaging (CAT-I) in the National Institute of Allergy and Infectious Diseases (NIAID, NIH).

Application References

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RRID

AB_10901171 (BioLegend Cat. No. 123131)
AB_2563102 (BioLegend Cat. No. 123137)
AB_11203717 (BioLegend Cat. No. 123132)

Antigen Details

Structure

EGF-TM7 family member, 160 kD glycoprotein

Distribution

Majority of tissue macrophages including peritoneal macrophages, macrophages in lung, gut, thymus and red pulp of spleen, Kuffer cells, Langerhans cells, bone marrow stromal cells, and a subset of dendritic cells

Function

Induction of immunological tolerance

Cell Type

Dendritic cells, Langerhans cells, Macrophages, Tregs

Biology Area

Cell Biology, Immunology, Innate Immunity, Neuroinflammation, Neuroscience

Antigen References

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Gene ID

13733

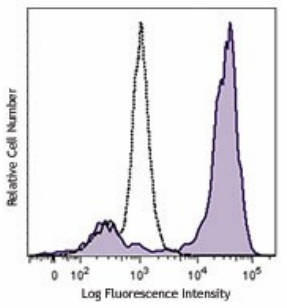
Related Protocols

Cell Surface Flow Cytometry Staining Protocol

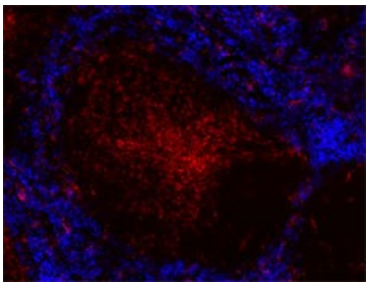
Other Formats

Brilliant Violet 605™ anti-mouse F4/80, Purified anti-mouse F4/80, Biotin anti-mouse F4/80, FITC anti-mouse F4/80, PE anti-mouse F4/80, PE/Cyanine5 anti-mouse F4/80, PE/Cyanine7 anti-mouse F4/80, APC anti-mouse F4/80, APC/Cyanine7 anti-mouse F4/80, Alexa Fluor® 488 anti-mouse F4/80, Alexa Fluor® 647 anti-mouse F4/80, Pacific Blue™ anti-mouse F4/80, PerCP anti-mouse F4/80, PerCP/Cyanine5.5 anti-mouse F4/80, Alexa Fluor® 700 anti-mouse F4/80, Brilliant Violet 421™ anti-mouse F4/80, Brilliant Violet 510™ anti-mouse F4/80, Alexa Fluor® 594 anti-mouse F4/80, Brilliant Violet 785™ anti-mouse F4/80, Purified anti-mouse F4/80 (Maxpar® Ready), PE/Dazzle™ 594 anti-mouse F4/80, Brilliant Violet 650™ anti-mouse F4/80, Brilliant Violet 711™ anti-mouse F4/80, APC/Fire™ 750 anti-mouse F4/80, TotalSeq™-A0114 anti-mouse F4/80, TotalSeq™-B0114 anti-mouse F4/80, TotalSeq™-C0114 anti-mouse F4/80, Spark YG™ 570 anti-mouse F4/80, KIRAVIA Blue 520™ anti-mouse F4/80, Ultra-LEAF™ Purified anti-mouse F4/80, APC/Fire™ 810 anti-mouse F4/80, Spark NIR™ 685 anti-mouse F4/80

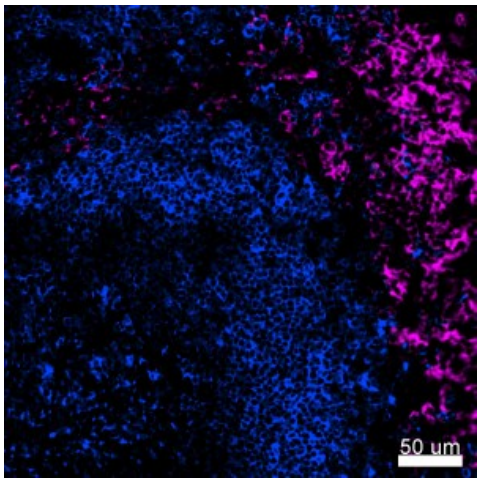
Product Data



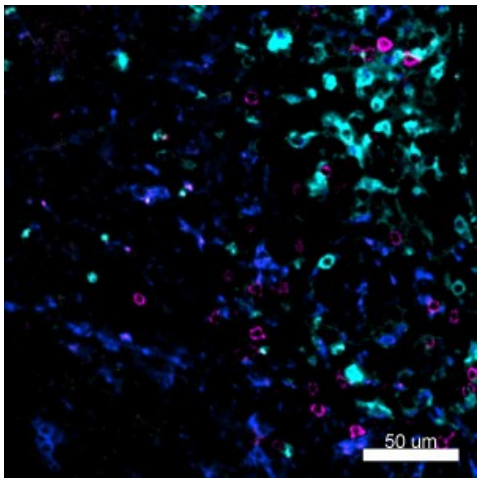
Thioglycolate-elicited Balb/c mouse peritoneal macrophages were stained with F4/80 (clone BM8) Brilliant Violet 421™ (filled histogram) or rat IgG2a, κ Brilliant Violet 421™ isotype control (open histogram).



C57BL/6 mouse frozen spleen section was fixed with 4% paraformaldehyde (PFA) for ten minutes at room temperature and blocked with 5% FBS plus 5% rat/mouse serum for 30 minutes at room temperature. Then the section was stained with 2 µg/ml of anti-mouse F4/80 (clone BM8) Brilliant Violet 421™ (Blue) and anti-mouse CD8a (clone 53-6.7) Alexa Fluor® 647 (red) overnight at 4°C. The image was captured with a 10X objective.



Confocal image of C57BL/6 mouse spleen sample acquired using the IBEX method of highly multiplexed antibody-based imaging: MHCII (blue) in Cycle 2 and F4/80 (magenta) in Cycle 2. Tissues were prepared using ~1% (vol/vol) formaldehyde and a detergent. Following fixation, samples are immersed in 30% (wt/vol) sucrose for cryoprotection. Images are courtesy of Drs. Andrea J. Radtke and Ronald N. Germain of the Center for Advanced Tissue Imaging (CAT-I) in the National Institute of Allergy and Infectious Diseases (NIAID, NIH).



Mice were injected subcutaneously with sheep red blood cells in a volume of 25 µl per site on days 0 and 4 and harvested on day 11. Confocal image of C57BL/6 mouse lymph node acquired using the IBEX method of highly multiplexed antibody-based imaging: F4/80 (cyan) in Cycle 3, CD68 (blue) in Cycle 6, and NK1.1 (magenta) in Cycle 9. Tissues were prepared using ~1% (vol/vol) formaldehyde and a detergent. Following fixation, samples are immersed in 30% (wt/vol) sucrose for cryoprotection. Images are courtesy of Drs. Andrea J. Radtke and Ronald N. Germain of the Center for Advanced Tissue Imaging (CAT-I) in the National Institute of Allergy and Infectious Diseases (NIAID, NIH).

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