

PE anti-human CD117 (c-kit) Antibody

Catalog# / Size	313203 / 25 tests 313204 / 100 tests
Clone	104D2
Regulatory Status	RUO
Other Names	Stem cell factor receptor, c-kit, mast cell growth factor receptor, steel factor receptor
Isotype	Mouse IgG1, κ
Description	CD117 is a 145 kD protein tyrosine kinase also known as c-Kit. It is a receptor for stem cell factor or c-Kit ligand. CD117 is expressed on pluripotent hematopoietic progenitor cells (approximately 1-4% bone marrow cells), mast cells, and acute myeloid leukemia cells (AML). CD117 binding of c-Kit ligand induces phosphorylation of CD117 and stimulates proliferation and survival of primitive hematopoietic stem cells as well as erythroid-committed and granulomonocytic committed cells.

Product Details

Verified Reactivity	Human
Reported Reactivity	Cynomolgus, Cow
Antibody Type	Monoclonal
Host Species	Mouse
Immunogen	MOLM-1 megakaryocytic cell line
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 PE 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 CD117 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 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 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.
Excitation Laser	Blue Laser (488 nm) Green Laser (532 nm)/Yellow-Green Laser (561 nm)
Application Notes	The 104D2 antibody does not block binding of c-Kit ligand. Additional reported applications (for the relevant formats) include: immunoprecipitation ¹ , immunofluorescence microscopy ¹ , and spatial biology (IBEX) ^{4,5} .
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	1. Broudy VC, <i>et al.</i> 1999. <i>Blood</i> 94:1979. (IF, IP) 2. Yoshino N, <i>et al.</i> 2000. <i>Exp. Anim. (Tokyo)</i> 49:97. (FC) 3. Nagano M, <i>et al.</i> 2007. <i>Blood</i> 110:151. (FC) PubMed
(PubMed link indicates BioLegend citation)	

4. Radtke AJ, *et al.* 2020. *Proc Natl Acad Sci U S A.* 117:33455-65. (SB) [PubMed](#)
5. Radtke AJ, *et al.* 2022. *Nat Protoc.* 17:378-401. (SB) [PubMed](#)

Product Citations

1. Sun J, *et al.* 2008. *J Biol Chem.* 283:27444. [PubMed](#)
2. Sun J, *et al.* 2018. *Oncogenesis.* 7:48. [PubMed](#)
3. Zhao Y, *et al.* 2016. *Cell Rep.* 16:2003-2016. [PubMed](#)
4. Sun J, *et al.* 2009. *J Biol Chem.* 284:11039. [PubMed](#)
5. Niwa A, *et al.* 2011. *PLoS One.* 6:e22261. [PubMed](#)
6. Cho K, *et al.* 2017. *Biochem Biophys Res Commun.* 10.1016/j.bbrc.2017.04.141. [PubMed](#)
7. Cruse G, *et al.* 2015. *Mol Biol Cell.* 26:1711. [PubMed](#)
8. Taguchi A, *et al.* 2017. *Cell Stem Cell.* 21:730. [PubMed](#)
9. Lecluze E, *et al.* 2020. *Hum Reprod.* 35:1099. [PubMed](#)
10. Shen C, *et al.* 2021. *Front Immunol.* 12:680055. [PubMed](#)
11. Zhang J, *et al.* 2019. *Dev Cell.* 48:329. [PubMed](#)
12. Suzuki S, *et al.* 2021. *STAR Protocols.* 2(3):100683. [PubMed](#)
13. Schielke L, *et al.* 2022. *Front Immunol.* 13:916701. [PubMed](#)
14. Fang F, *et al.* 2021. *Cell Rep.* 37:109981. [PubMed](#)
15. Zeng Z, *et al.* 2021. *Nat Commun.* 12:3641. [PubMed](#)
16. Smith-Diaz CC, *et al.* 2021. *Front Oncol.* 11:709543. [PubMed](#)
17. López-Sanz C, *et al.* 2022. *STAR Protoc.* 3:101755. [PubMed](#)
18. Bender R, *et al.* 2016. *PLoS Pathog.* 12: 1005641. [PubMed](#)
19. Zhang Y *et al.* 2018. *Cell stem cell.* 23(4):516-529. [PubMed](#)
20. Pan C, *et al.* 2019. *Int J Mol Med.* 44:1629. [PubMed](#)
21. Mpakou V, *et al.* 2021. *Exp Ther Med.* 1.010416667. [PubMed](#)
22. Samuel RM, *et al.* 2020. *Cell Stem Cell.* 27:876. [PubMed](#)
23. Bennstein SB, *et al.* 2020. *eLife.* 9:e55232. [PubMed](#)
24. Wang G, *et al.* 2018. *Int J Mol Med.* 41:791. [PubMed](#)

RRID

AB_314982 (BioLegend Cat. No. 313203)
 AB_314983 (BioLegend Cat. No. 313204)

Antigen Details

Structure	Growth factor receptor with tyrosine kinase activity, subclass III, approximately 145 kD
Distribution	Pluripotent hematopoietic progenitor cells (approximately 1-4% bone marrow cells), mast cells, acute myeloid leukemic cells (AML)
Function	Growth factor receptor for stem cell factor. Induces proliferation and survival of primitive hematopoietic progenitors. Potent inducer of proliferation in erythroid-committed progenitor cells. Defects in CD117 have been linked to severe anemia and a decreased number of hematopoietic progenitor cells.
Ligand/Receptor	c-Kit ligand
Modification	Multiple phosphorylation sites
Cell Type	Embryonic Stem Cells, Hematopoietic stem and progenitors, Leukemia, Mast cells, Mesenchymal Stem Cells
Biology Area	Immunology, Stem Cells
Molecular Family	CD Molecules
Antigen References	<ol style="list-style-type: none"> 1. Giebel LB, <i>et al.</i> 1992. <i>Oncogene</i> 7:2207. 2. Furitsu T, <i>et al.</i> 1993. <i>J. Clin. Invest.</i> 92:1736.
Gene ID	3815

Related Protocols

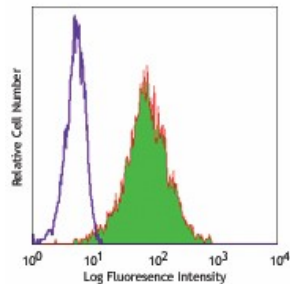
[Cell Surface Flow Cytometry Staining Protocol](#)

Other Formats

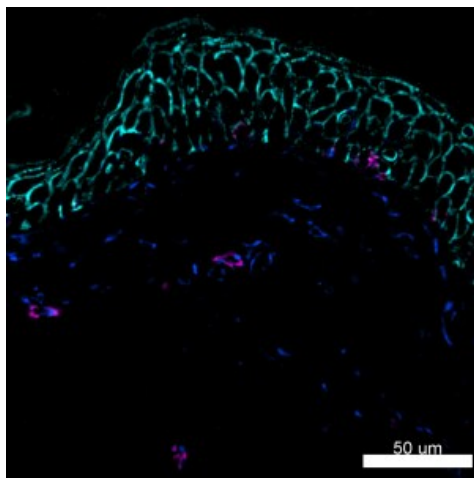
Purified anti-human CD117 (c-kit), PE anti-human CD117 (c-kit), APC anti-human CD117 (c-kit), Biotin anti-human CD117 (c-kit), PE/Cyanine5 anti-human CD117 (c-kit), PE/Cyanine7 anti-human CD117 (c-kit), PerCP/Cyanine5.5 anti-human CD117 (c-kit),

Brilliant Violet 421™ anti-human CD117 (c-kit), Brilliant Violet 605™ anti-human CD117 (c-kit), Brilliant Violet 510™ anti-human CD117 (c-kit), Brilliant Violet 650™ anti-human CD117 (c-kit), Purified anti-human CD117 (c-kit) (Maxpar® Ready), PE/Dazzle™ 594 anti-human CD117 (c-kit), APC/Cyanine7 anti-human CD117 (c-kit), Brilliant Violet 711™ anti-human CD117 (c-kit), FITC anti-human CD117 (c-kit), Alexa Fluor® 488 anti-human CD117 (c-kit), Alexa Fluor® 647 anti-human CD117 (c-kit), APC/Fire™ 750 anti-human CD117 (c-kit), Brilliant Violet 785™ anti-human CD117 (c-kit), TotalSeq™-A0061 anti-human CD117 (c-kit), TotalSeq™-C0061 anti-human CD117 (c-kit), TotalSeq™-B0061 anti-human CD117 (c-kit), Alexa Fluor® 700 anti-human CD117 (c-kit), Spark NIR™ 685 anti-human CD117 (c-kit) Antibody, APC/Fire™ 750 anti-human CD117 (c-kit), TotalSeq™-D0061 anti-human CD117 (c-kit), GMP APC anti-human CD117 (c-kit), GMP PE anti-human CD117 (c-kit)

Product Data



Human erythroleukemia cell line TF-1 stained with 104D2 PE



Confocal image of human skin sample acquired using the IBEX method of highly multiplexed antibody-based imaging: CD117 (magenta) in Cycle 3, CD138 (cyan) in Cycle 4, and Vimentin (blue) in Cycle 5. 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).

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-BioLegend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587