Technical Data Sheet

Alexa Fluor® 488 Mouse anti-GATA3

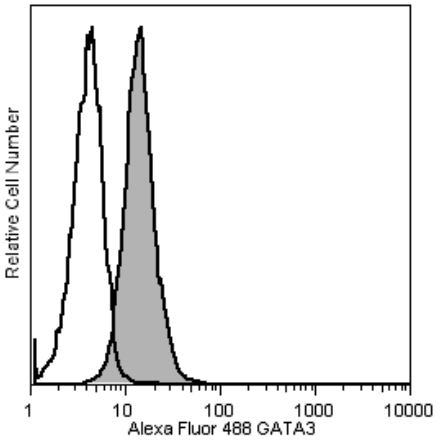
Product Information

Material Number:	**560163**
Size:	50 tests
Vol. per Test:	20 µl
Clone:	L50-823
Immunogen:	Conserved peptide between the trans-activation and DNA-binding domains of human, mouse and rat GATA3
Isotype:	Mouse (BALB/c) IgG1, κ
Reactivity:	Confirmed by flow cytometry: Human, Mouse Confirmed by western blot using purified antibody (Cat. No. 558686): Human, Mouse Predicted: Rat
Storage Buffer:	Aqueous buffered solution containing BSA, protein stabilizer, and ≤0.09% sodium azide.

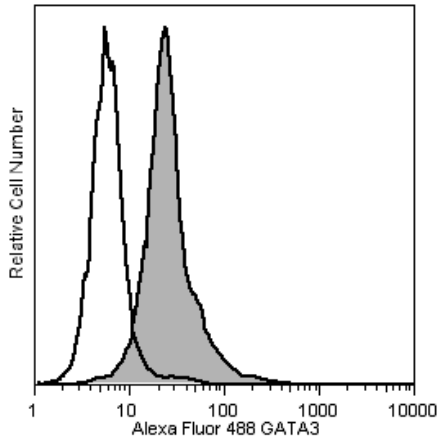
Description

GATA3 (GATA binding protein 3) is a member of the GATA family of transcription factors. This ~50-kDa nuclear protein regulates the development and subsequent maintenance of multiple tissues. GATA3 is involved in the development of T lymphocytes (regulates T cell receptor subunit gene expression) and the differentiation of mature T cells to become Th2 cells. The expressed levels of normal or mutant GATA3 are also associated with the behaviors of various cancer cells including estrogen receptor-positive breast carcinoma cells.

The L50-823 monoclonal antibody recognizes human and mouse GATA3.



Comparison of GATA3 expression in human T and B cell lines. *Jurkat T leukemia (ATCC TIB152, shaded histogram) and Ramos Burkitt's lymphoma (ATCC CRL-1596, open histogram) were fixed with pre-warmed BD Cytofix™ buffer (Cat. No. 554655) for 10 minutes at 37ºC, permeabilized with BD™ Phosflow Perm Buffer III (Cat. No. 558050) on ice for at least 30 minutes, and then stained with either Alexa Fluor® 488 Mouse anti-GATA3 or Alexa Fluor® 488 Mouse IgG1 κ Isotype control (Cat. No. 557782, not shown). The GATA3 staining on the Jurkat cell line was significantly brighter than the isotype control on Jurkat cells, while the GATA3 staining on the Ramos cells coincided very closely to its isotype control (data not shown). Thus, GATA3 expression was detected on the T cell line but not the B cell line. Flow cytometry was performed on a BD™ LSR II flow cytometry system.*



Comparison of GATA3 expression in mouse Th2 and Th1 cell lines. *D10.G4.1 Th2 lymphoblasts (ATCC TIB-224, shaded histogram) and 2D6 Th1 clone (Ahn et al, 1998, open histogram) were fixed with pre-warmed BD Cytofix™ buffer (Cat. No. 554655) for 10 minutes at 37ºC, permeabilized with BD™ Phosflow Perm Buffer III (Cat. No. 558050) on ice for at least 30 minutes, and then stained with either Alexa Fluor® 488 Mouse anti-GATA3 or Alexa Fluor® 488 Mouse IgG1 κ Isotype control (Cat. No. 557782, not shown). When compared to the respective isotype controls, the GATA3 staining on the D10.G4.1 cell line was significantly brighter than on the 2D6 cells. Flow cytometry was performed on a BD™ LSR II flow cytometry system.*

BD Biosciences

bdbiosciences.com

United States	Canada	Europe	Japan	Asia Pacific	Latin America/Caribbean
877.232.8995	888.268.5430	32.53.720.550	0120.8555.90	65.6861.0633	0800.771.7157

For country-specific contact information, visit **bdbiosciences.com/how_to_order/**

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

The antibody was conjugated to Alexa Fluor® 488 under optimum conditions, and unreacted Alexa Fluor® 488 was removed.

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

Application Notes

Application

Intracellular staining (flow cytometry)	Routinely Tested

Recommended Assay Procedure:

Either BD Cytofix™ fixation buffer or BD™ Phosflow Fix Buffer I may be used for cell fixation.

Suggested Companion Products

Catalog Number	Name	Size	Clone
557782	Alexa Fluor® 488 Mouse IgG1 κ Isotype Control	50 tests	MOPC-21
554655	Fixation Buffer	100 ml	(none)
557870	Fix Buffer I	250 ml	(none)
558050	Perm Buffer III	125 ml	(none)

Product Notices

1. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
2. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use 1 × 10^6 cells in a 100-µl experimental sample (a test).
3. Alexa Fluor® 488 fluorochrome emission is collected at the same instrument settings as for fluorescein isothiocyanate (FITC).
4. For fluorochrome spectra and suitable instrument settings, please refer to our Fluorochrome Web Page at www.bdbiosciences.com/colors.
5. The Alexa Fluor®, Pacific Blue™, and Cascade Blue® dye antibody conjugates in this product are sold under license from Molecular Probes, Inc. for research use only, excluding use in combination with microarrays, or as analyte specific reagents. The Alexa Fluor® dyes (except for Alexa Fluor® 430), Pacific Blue™ dye, and Cascade Blue® dye are covered by pending and issued patents.
6. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
7. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
8. Alexa Fluor® is a registered trademark of Molecular Probes, Inc., Eugene, OR.

References

Ahn H-J, Maruo S, Tomura M, et al. A mechanism underlying synergy between IL-12 and IFN-γ-inducing factor in enhanced production of IFN-γ. *J Immunol.* 1997; 159:2125-2131. (Methodology)

Asselin-Labat M-L, Sutherland KD, Barker H, et al. Gata-3 is an essential regulator of mammary-gland morphogenesis and luminal-cell differentiation. *Nat Cell Biol.* 2006; 9:201-209. (Biology)

Kouros-Mehr H, Slorach EM, Sternlicht MD, Werb Z. GATA-3 maintains the differentiation of the luminal cell fate in the mammary gland. *Cell.* 2006; 127:1041-1055. (Biology)

Marine J, Winoto A. The human enhancer-binding protein Gata3 binds to several T-cell receptor regulatory elements. *Proc Natl Acad Sci U S A.* 1991; 88(16):7284-7288. (Biology)

Steenbergen RDM, OudeEngberink VE, Kramer D, et al. Down-regulation of GATA-3 expression during human papillomavirus-mediated immortalization and cervical carcinogenesis. *Am J Pathol.* 2002; 160(6):1945-1951. (Biology)

Tong Q, Hotamisligil GS. Cell fate in the mammary gland. *Nature.* 2008; 556:724-726. (Biology)

Usary J, Llaca V, Karaca G, et al. Mutation of GATA3 in human breast tumors. *Oncogene.* 2004; 23(46):7669-7678. (Biology)

van Esch H, Groenen P, Nesbit MA, et al. GATA3 haplo-insufficiency causes human HDR syndrome. *Nature.* 2000; 106:419-422. (Biology)

Yang Z, Gu L, Romeo P-H, et al. Human GATA-3 trans-activation, DNA-binding, and nuclear localization activities are organized into distinct structural domains. *Mol Cell Biol.* 1994; 14(3):2201-2212. (Biology)

Zheng W, Flavell RA. The transcription factor GATA-3 is necessary and sufficient for Th2 cytokine gene expression in CD4 T cells. *Cell.* 1997; 89(4):587-596. (Biology)