Technical Data Sheet

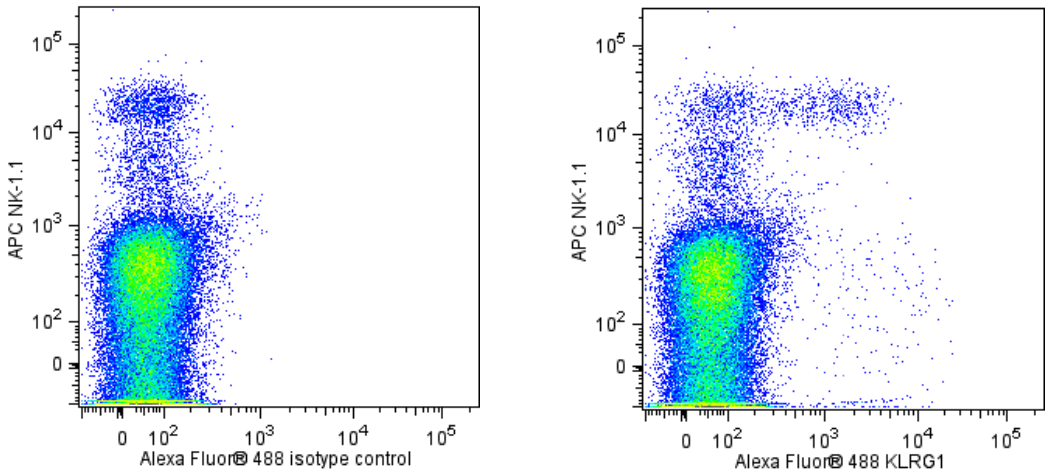
Alexa Fluor® 488 Hamster Anti-Mouse KLRG1

Product Information

Material Number:	**561619**
Alternate Name:	Klrg1; Killer cell lectin-like receptor subfamily G member 1; MAFA
Size:	50 µg
Concentration:	0.2 mg/ml
Clone:	2F1
Immunogen:	A-LAK from C57BL/6 mice
Isotype:	Syrian Hamster IgG2, κ
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

The 2F1 monoclonal antibody specifically binds to KLRG1 (*K*iller cell *L*ectin-like *R*eceptor *G1*), which is the mouse homologue of the rat mast cell function-associated antigen (MAFA), on all mouse strains tested (eg, AKR/J, BALB/c, C3H/HeN, C3H.SW, C57BL/6, DBA/1, SJL, 129/J). Unlike rat MAFA, which is expressed on mast cells, mouse KLRG1 is expressed on a large subset of NK cells, lymphokine-activated killer (LAK) cells, adherent LAK (A-LAK) cells, subsets of activated CD8+ T lymphocytes, and small fractions of CD4+ and CD8+ T cells, but not mast cells. The expression of KLRG1 is correlated with reduced proliferative capacity of activated T lymphocytes or reduced effector functions of activated NK cells. This molecule is believed to play a common role in the regulation of leukocytes of both the innate and adaptive immune system. It has been observed that the 2F1 mAb stains the rat basophilic leukemia cell line, RBL-2H3, which is known to express MAFA. The KLRG1 protein is an inhibitory lectin-like type II transmembrane receptor containing a cytoplasmic motif similar to ITIM (*I*mmunoreceptor *T*yrosine-based *I*nhibitory *M*otif); its ligand has not been identified KLRG1 is expressed mainly as a homodimeric molecule consisting of two N-glycosylated subunits of approximately 30-38 kDa. The level of KLRG1 expression is reduced in MHC class I-deficient mice, although direct binding of KLRG1 to MHC class I antigens could not be detected. Cross-linking of KLRG1 by 2F1 mAb reduces TCR-mediated Ca++ mobilization and cytotoxic responses (but not IFN-γ production) by CD8+ T cells and inhibits IFN-γ and TNF-α production and redirected lysis by NK cells.



Flow cytometric analysis of KLRG1 expression on mouse splenocytes. *C57BL/6 splenocytes were preincubated with Mouse BD Fc Block™ purified anti-mouse CD16/CD32 mAb 2.4G2 (Cat. no. 553141/553142), then stained with either Alexa Fluor® 488 Hamster IgG2, κ isotype control (Cat. No. 562168, left panel) or an Alexa Fluor® 488 Hamster Anti-Mouse KLRG1 antibody (Cat.No. 561619, right panel) in conjunction with an APC mouse Anti-mouse NK-1.1 antibody (Cat.No. 550627/561117). Dot plots were derived from gated events based on forward and side light-scatter characteristics of viable splenocytes. Flow cytometry was performed using a BD™ LSR II flow cytometry system.*

Preparation and Storage

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

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.

BD Biosciences

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Application Notes

Application

Flow cytometry	Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
554656	Stain Buffer (FBS)	500 ml	(none)
553141	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.1 mg	2.4G2
553142	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.5 mg	2.4G2
550627	APC Mouse Anti-Mouse NK-1.1	0.1 mg	PK136
561117	APC Mouse Anti-Mouse NK-1.1	25 µg	PK136
562168	Alexa Fluor® 488 Hamster IgG2, κ Isotype Control	0.1 mg	B81-3

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. 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.
4. Alexa Fluor® 488 fluorochrome emission is collected at the same instrument settings as for fluorescein isothiocyanate (FITC).
5. Alexa Fluor® is a registered trademark of Molecular Probes, Inc., Eugene, OR.
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. For fluorochrome spectra and suitable instrument settings, please refer to our Fluorochrome Web Page at www.bdbiosciences.com/colors.
8. Although hamster immunoglobulin isotypes have not been well defined, BD Biosciences Pharmingen has grouped Armenian and Syrian hamster IgG monoclonal antibodies according to their reactivity with a panel of mouse anti-hamster IgG mAbs. A table of the hamster IgG groups, Reactivity of Mouse Anti-Hamster Ig mAbs, may be viewed at http://www.bdbiosciences.com/documents/hamster_chart_11x17.pdf.
9. An isotype control should be used at the same concentration as the antibody of interest.

References

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Corral L, Hanke T, Vance RE, Cado D, Raulet DH. NK cell expression of the killer cell lectin-like receptor G1 (KLRG1), the mouse homolog of MAFA, is modulated by MHC class I molecules. *Eur J Immunol.* 2000; 30(3):920-930. (Immunogen)

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McMahon CW, Zajac AJ, Jamieson AM. Viral and bacterial infections induce expression of multiple NK cell receptors in responding CD8(+) T cells. *J Immunol.* 2002; 169(3):1444-1452. (Biology)

Robbins SH, Nguyen KB, Takahashi N, Mikayama T, Biron CA, Brossay L. Cutting edge: inhibitory functions of the killer cell lectin-like receptor G1 molecule during the activation of mouse NK cells. *J Immunol.* 2002; 168(6):2585-2589. (Biology)

Robbins SH, Terrizzi SC, Sydora BC, Mikayama T, Brossay L. Differential regulation of killer cell lectin-like receptor G1 expression on T cells. *J Immunol.* 2003; 170(12):5876-5885. (Clone-specific: (Co)-stimulation, Stimulation)

Voehringer D, Blaser C, Brawand P, Raulet DH, Hanke T, Pircher H. Viral infections induce abundant numbers of senescent CD8 T cells. *J Immunol.* 2001; 167(9):4838-4843. (Biology)