Technical Data Sheet

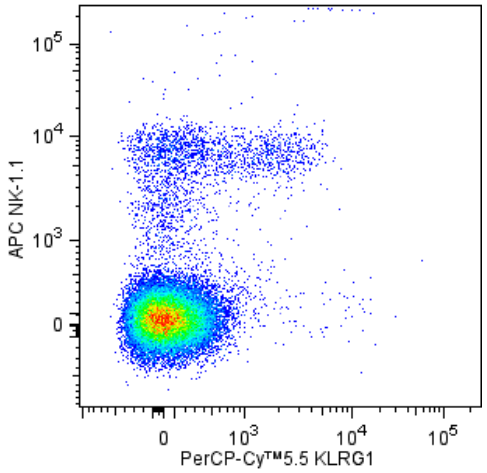
PerCP-Cy™5.5 Hamster Anti-Mouse KLRG1

Product Information

Material Number:	**563595**
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.



Two-color flow cytometric analysis of KLRG1 expression on mouse splenocytes. *C57BL/6 mouse splenic leucocytes were preincubated with Purified Rat Anti-Mouse CD16/CD32 antibody (Mouse BD Fc Block™) (Cat. No. 553141/553142). The cells were then stained with PerCP-Cy™5.5 Hamster Anti-Mouse KLRG1 (Cat. No. 563595) and APC Mouse Anti-mouse NK-1.1 antibody (Cat. No. 550627/561117) antibodies. A two-color flow cytometric dot plot shows the correlated expression patterns of KLRG1 versus NK1.1 for gated events with the forward and side light-scatter characteristics of viable splenic leucocytes. Flow cytometry was performed using a BD™ LSR II Flow Cytometer 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 with PerCP-Cy5.5 under optimum conditions, and unconjugated antibody and free PerCP-Cy5.5 were removed. Storage of PerCP-Cy5.5 conjugates in unoptimized diluent is not recommended and may result in loss of signal intensity.

Application Notes

Application

Flow cytometry	Routinely Tested

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Suggested Companion Products

Catalog Number	Name	Size	Clone
554656	Stain Buffer (FBS)	500 ml	(none)
560562	PerCP-Cy™5.5 Hamster IgG2, κ Isotype Control	0.1 mg	B81-3
550627	APC Mouse Anti-Mouse NK-1.1	0.1 mg	PK136
561117	APC Mouse Anti-Mouse NK-1.1	25 µg	PK136
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

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. An isotype control should be used at the same concentration as the antibody of interest.
3. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
4. Cy is a trademark of Amersham Biosciences Limited. This conjugated product is sold under license to the following patents: US Patent Nos. 5,486,616; 5,569,587; 5,569,766; 5,627,027.
5. Please observe the following precautions: Absorption of visible light can significantly alter the energy transfer occurring in any tandem fluorochrome conjugate; therefore, we recommend that special precautions be taken (such as wrapping vials, tubes, or racks in aluminum foil) to prevent exposure of conjugated reagents, including cells stained with those reagents, to room illumination.
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. PerCP-Cy5.5–labelled antibodies can be used with FITC- and R-PE–labelled reagents in single-laser flow cytometers with no significant spectral overlap of PerCP-Cy5.5, FITC, and R-PE fluorescence.
8. PerCP-Cy5.5 is optimized for use with a single argon ion laser emitting 488-nm light. Because of the broad absorption spectrum of the tandem fluorochrome, extra care must be taken when using dual-laser cytometers, which may directly excite both PerCP and Cy5.5™. We recommend the use of cross-beam compensation during data acquisition or software compensation during data analysis.
9. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
10. This product is subject to proprietary rights of Amersham Biosciences Corp. and Carnegie Mellon University and made and sold under license from Amersham Biosciences Corp. This product is licensed for sale only for research. It is not licensed for any other use. If you require a commercial license to use this product and do not have one return this material, unopened to BD Biosciences, 10975 Torreyana Rd, San Diego, CA 92121 and any money paid for the material will be refunded.
11. 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.

References

Beyersdorf NB, Ding X, Karp K, Hanke T. Expression of inhibitory "killer cell lectin-like receptor G1" identifies unique subpopulations of effector and memory CD8 T cells. *Eur J Immunol.* 2001; 31(12):3443-3452. (Clone-specific: Bioassay, Blocking, Functional assay)

Blaser C, Kaufmann M, Pircher H. Virus-activated CD8 T cells and lymphokine-activated NK cells express the mast cell function-associated antigen, an inhibitory C-type lectin. *J Immunol.* 1998; 161(12):6451-6454. (Biology)

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: Flow cytometry, Immunoprecipitation)

Hanke T, Corral L, Vance RE, Raulet DH. 2F1 antigen, the mouse homolog of the rat "mast cell function-associated antigen", is a lectin-like type II transmembrane receptor expressed by natural killer cells. *Eur J Immunol.* 1998; 28(12):4409-4417. (Clone-specific: Flow cytometry)

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. (Clone-specific)

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. (Clone-specific: Flow cytometry)

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