Technical Data Sheet

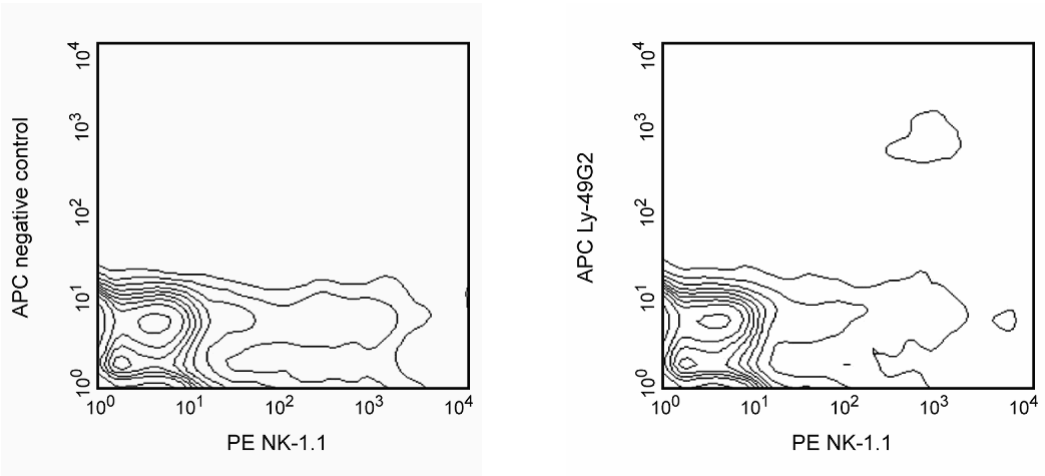
APC Rat Anti-Mouse Ly-49G2

Product Information

Material Number:	**555316**
Alternate Name:	LGL-1
Size:	0.1 mg
Concentration:	0.2 mg/ml
Clone:	4D11
Immunogen:	Large granular lymphocytes (LGL) enriched from C57BL/6N mouse liver
Isotype:	Rat (F344) IgG2a, κ
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

The 4D11 antibody reacts with Ly-49G2 (also known as LGL-1), an inhibitory receptor which is expressed on subsets of natural killer (NK) cells and DX5-positive T lymphocytes (NK-T cells) in all strains tested (e.g., AKR/N, BALB/c, C3H/HeJ, C57BL/6, CBA/J, DBA/2, SJL, 129) and on a population of memory CD8+ T lymphocytes in C57BL/6 mice. Cross-reaction of 4D11 antibody to Ly-49A[B6], Ly-49A[BALB], and Ly-49T[129/J] inhibitory receptors and Ly-49L[CBA/J] activating receptor has been reported. The proportion of NK-T cells expressing Ly-49A and Ly-49G2 is higher (2-5 fold) in thymus than in liver (immature and mature NK-T cells, respectively), and there is evidence that down-regulation of Ly-49 receptor expression is necessary for normal NK-T-cell development to occur. Most NK cells express a single allele of Ly-49A and/or Ly-49G2, although occasionally they may express more than one allele. The Ly-49 family of NK-cell receptors, members of the C-type lectin superfamily, are disulfide-linked type-II transmembrane protein homodimers with extracellular carbohydrate-recognition domains, which bind to MHC class I alloantigens. The Ly-49 family members are expressed independently, such that an individual NK or T cell may display more than one class of Ly-49 receptor homodimers. Binding of Ly-49G[B6]-expressing transfectants to H-2Dd+/H-2Ld+ ConA blasts has been demonstrated, and H-2D[d]-expressing target cells inhibit the lytic activity of Ly-49G2-expressing NK cells. The levels of the Ly-49 inhibitory receptors are down-regulated by their ligands *in vivo*, and the various levels of expression of a Ly-49 inhibitory receptor may affect the specificity of NK cells. Ly-49G2[+] NK cells are able to lyse target tumor cells expressing H-2[a] and H-2[b] MHC class I antigens *in vitro*, and they mediate allogeneic and hybrid resistance to H-2[b] bone marrow transplantation. The Ly-49A[BALB] and Ly-49A[B6] alloantigens bind to MHC class I antigens of the d and k haplotypes, and Ly-49A[+] IL-2-activated NK cells are unable to lyse target cells expressing H-2[d] and H-2[k]. *In vitro* studies suggest that the Ly-49G2 and Ly-49A receptors mediate negative regulation of NK-cell cytolytic activity via tyrosine phosphorylation of their ITIMs (***I***mmunoreceptor ***T***yrosine-based ***I***nhibitory ***M***otifs). Ly-49T[129/J] has a unique ITIM sequence, and Ly-49T-transfected 293T (human kidney epithelial) cells do not bind soluble tetramers of any tested H-2 alloantigen (D[b], D[d], D[k], K[b], K[d], K[k], L[d]).



Two-color analysis of Ly-49G2 expression on splenic NK cells. *C57Bl/6 splenocytes were simultaneously stained with PE-conjugated anti-mouse NK-1.1 mAb PK136 (Cat. No. 557391/553165, both panels) and APC-conjugated 4D11 monoclonal antibody (right panel). Flow cytometry was performed on a BD FACSCalibur™ flow cytometry system.*

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Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
The antibody was conjugated to APC under optimum conditions, and unconjugated antibody and free APC were removed.
Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

Application Notes

Application

Flow cytometry	Routinely Tested

Recommended Assay Procedure:
The APC fluorochrome is excited by laser lines from 595 to 647 nm, and it's emission is collected in a detector for fluorescences wavelengths between 640 and 680 nm.

Suggested Companion Products

Catalog Number	Name	Size	Clone
553932	APC Rat IgG2a κ Isotype Control	0.1 mg	R35-95
557391	PE Mouse Anti-Mouse NK-1.1	0.1 mg	PK136

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. For fluorochrome spectra and suitable instrument settings, please refer to our Fluorochrome Web Page at www.bdbiosciences.com/pharmingen/colors.
4. This APC-conjugated reagent can be used in any flow cytometer equipped with a dye, HeNe, or red diode laser.
5. 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.

References

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