V450 Mouse Anti-Mouse Ly-49A

**Product Information**

- **Material Number:** 561204
- **Alternate Name:** Ly-49a; Klra1; Killer cell lectin-like receptor subfamily A member1; Klra22
- **Size:** 50 µg
- **Concentration:** 0.2 mg/ml
- **Clone:** A1
- **Immunogen:** Mouse C57BL/6N T lymphoma EL-4
- **Isotype:** Mouse (BALB/c) IgG2a, κ
- **Reactivity:** QC Testing: Mouse
- **Storage Buffer:** Aqueous buffered solution containing protein stabilizer and ≤0.09% sodium azide.

**Description**

The A1 monoclonal antibody specifically binds to the Ly-49A[B6] alloantigen, an inhibitory receptor that is expressed on subsets of natural killer (NK) cells and NK-1.1-positive T lymphocytes (NKT cells) in C57BL/6, C57BL/10, and B10 congenic mice, on a population of memory CD8+ T lymphocytes and NK1.1+γδ T cells in C57BL/6 mice, and on a distinct subset of B-1 cells (CD5+B220lo) of C57BL/6 mice. The A1 antibody has also been reported to crossreact with Ly-49ANOD, Ly-49PNOD, Ly-49P129/J, and Ly-49V129/J alloantigens. The proportion of NKT cells expressing Ly-49A is higher (2-5 fold) in thymus than in liver (immature and mature NKT cells, respectively), and there is evidence that the down regulation of Ly-49 receptor expression is necessary for normal NKT cell development to occur. Most NK cells express a single allele of Ly-49A, 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 (CRD) that bind to MHC class 1 alloantigens. The A1 antibody is specific for the Ly-49A[B6] CRD. 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. The Ly-49A[B6] alloantigen binds to H-2Dd, H-2Dk, and H-2Dp, and the A1 antibody blocks this binding. Binding of Ly-49A[B6] to lymphoblasts expressing MHC class I antigens of the f, q, r, s, and v haplotypes has also been demonstrated. The levels of the Ly-49 inhibitory receptors are down-regulated by their ligands in vivo, and various levels of expression of a Ly-49 inhibitory receptor may affect the specificity of NK cells. In vitro studies suggest that the Ly-49A receptor mediates negative regulation of NK-cell cytolytic activity via tyrosine phosphorylation of its ITIM (Immunoreceptor Tyrosine-based Inhibitory Motif).

The antibody is conjugated to BD Horizon™ V450, which has been developed for use in multicolor flow cytometry experiments and is available exclusively from BD Biosciences. It is excited by the Violet laser Ex max of 406 nm and has an Em Max at 450 nm. Conjugates with BD Horizon™ V450 can be used in place of Pacific Blue™ conjugates.

**Flow Cytometric Analysis**

Flow cytometric analysis of Ly-49A expressed on C57BL/6 mouse splenocytes. C57BL/6 splenocytes were simultaneously stained with FITC Rat anti-Mouse CD49b (Cat. No. 553857) and BD Horizon™ V450 Mouse (BALB/c) anti-Mouse Ly-49A (Cat. No. 561204, Left Panel) or BD Horizon™ V450 Mouse IgG2a, κ Isotype Control (Cat. No. 560550, Right Panel). Two-color flow cytometric dot plots were derived from gated events with the forward and side light-scatter characteristics of viable cells. Flow cytometry was performed on a BD LSR™ II Flow Cytometer System.

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561204 Rev. 2
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 BD Horizon™ V450 under optimum conditions, and unreacted BD Horizon™ V450 was removed.

Application Notes

Suggested Companion Products

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<th>Catalog Number</th>
<th>Name</th>
<th>Size</th>
<th>Clone</th>
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<tr>
<td>560550</td>
<td>V450 Mouse IgG2a, κ Isotype Control</td>
<td>0.1 mg</td>
<td>G15S-178</td>
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<tr>
<td>553857</td>
<td>FITC Rat Anti-Mouse CD49b</td>
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<td>554656</td>
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<tr>
<td>554657</td>
<td>Stain Buffer (BSA)</td>
<td>500 mL</td>
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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. 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.
4. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
5. BD Horizon V450 has a maximum absorption of 406 nm and maximum emission of 450 nm. Before staining with this reagent, please confirm that your flow cytometer is capable of exciting the fluorochrome and discriminating the resulting fluorescence.
6. Pacific Blue™ is a trademark of Molecular Probes, Inc., Eugene, OR.

References
Hara T, Nishimura H, Hasegawa Y, Yoshikai Y. Thymus-dependent modulation of Ly49 inhibitory receptor expression on NK1.1+gamma/delta T cells. Immunology. 2001; 102(1):24-30. ( Biology)


Skold M, Cardell S. Differential regulation of Ly49 expression on CD4+ and CD4-CD8- (double negative) NK1.1+ T cells. *Eur J Immunol.* 2000; 30(8):2488-2496. (Clone-specific)


