

## Brilliant Violet 421™ anti-mouse Ly-6A/E (Sca-1) Antibody

<b>Catalog# / Size</b>	108127 / 125 µL 108128 / 50 µg
<b>Clone</b>	D7
<b>Regulatory Status</b>	RUO
<b>Other Names</b>	Sca-1
<b>Isotype</b>	Rat IgG2a, κ
<b>Description</b>	Ly-6A/E, also known as Sca-1, is an 18 kD member of the Ly-6 multigene family. Ly6A/E is a glycosylphosphatidylinositol (GPI)-linked protein expressed on hematopoietic stem cells. In mice expressing the Ly-6.2 haplotype (e.g., AKR, C57BL, C57BR, DBA/2, SJL, SWR, and 129), Ly-6A/E is also expressed on peripheral B lymphocytes and thymic and peripheral T lymphocytes. Strains expressing the Ly-6.1 haplotype (e.g., BALB/c, CBA, C3H/He, DBA/1, and NZB) have low Ly-6A/E expression on resting peripheral lymphocytes. The expression of Ly-6A/E on lymphocytes is upregulated upon activation from both Ly6.1 and Ly6.2 haplotype mice. Ly-6A/E is thought to be involved in the regulation of both T and B cell responses.

### Product Details

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<b>Verified Reactivity</b>	Mouse
<b>Antibody Type</b>	Monoclonal
<b>Host Species</b>	Rat
<b>Immunogen</b>	IL-2-dependent mouse T-cell line (CTL-L)
<b>Formulation</b>	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and BSA (origin USA).
<b>Preparation</b>	The antibody was purified by affinity chromatography and conjugated with Brilliant Violet 421™ under optimal conditions.
<b>Concentration</b>	µg sizes: 0.2 mg/mL µL sizes: lot-specific (to obtain lot-specific concentration, please enter the lot number in our <a href="#">Concentration and Expiration Lookup</a> or <a href="#">Certificate of Analysis</a> online tools.)
<b>Storage &amp; Handling</b>	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. <b>Do not freeze.</b>
<b>Application</b>	<a href="#">FC - Quality tested</a>
<b>Recommended Usage</b>	Each lot of this antibody is quality control tested by <a href="#">immunofluorescent staining with flow cytometric analysis</a> . For immunofluorescent staining using the µg size, the suggested use of this reagent is ≤0.25 µg per million cells in 100 µl volume. For immunofluorescent staining using the µl size, the suggested use of this reagent is 5 µl per million cells in 100 µl staining volume or 5 µl per 100 µl of whole blood. It is recommended that the reagent be titrated for optimal performance for each application.  Brilliant Violet 421™ excites at 405 nm and emits at 421 nm. The standard bandpass filter 450/50 nm is recommended for detection. Brilliant Violet 421™ is a trademark of Sirigen Group Ltd.  <a href="#">Learn more about Brilliant Violet™.</a>  This product is subject to proprietary rights of Sirigen Inc. and is made and sold under license from Sirigen Inc. The purchase of this product conveys to the buyer a non-transferable right to use the purchased product for research purposes only. This product may not be resold or incorporated in any manner into another product for resale. Any use for therapeutics or diagnostics is strictly prohibited. This product is covered by U.S. Patent(s), pending patent applications and foreign equivalents.
<b>Excitation Laser</b>	Violet Laser (405 nm)
<b>Application Notes</b>	The D7 antibody has been reported to induce T cell activation and inhibit TCR-induced IL-2

production. Additional reported applications (for the relevant formats) include: Western blotting<sup>1,2</sup>, immunoprecipitation<sup>1</sup>, *in vitro* lymphocyte activation<sup>3-6</sup>, induction of redirected lysis<sup>7</sup>, induction of T cell inhibitory signalling<sup>8</sup>, immunofluorescence<sup>9</sup>, and immunohistochemical staining of acetone-fixed frozen sections<sup>13</sup> and Bouin-fixed, paraffin-embedded samples<sup>9</sup>.

The two Sca-1 recognizing clones D7 and [E13-161.7](#) have been shown to bind distinct epitopes due to the inability of D7 to block the binding of E13-161.7.<sup>14</sup>

## Application References

(PubMed link indicates BioLegend citation)

1. Ortega G, *et al.* 1986. *J. Immunol.* 137:3240. (WB, IP)
2. Palfree RGE, *et al.* 1986. *Immunogenetics* 23:197. (WB)
3. Codias EK, *et al.* 1990. *J. Immunol.* 144:2197.
4. Malek TR, *et al.* 1986. *J. Exp. Med.* 164:709.
5. Codias EK, *et al.* 1990. *J. Immunol.* 145:1407.
6. Ivanov V, *et al.* 1994. *J. Immunol.* 153:2394.
7. Karlhofer FM, *et al.* 1991. *J. Immunol.* 146:3662.
8. Fleming T, *et al.* 1994. *J. Immunol.* 153:1955.
9. van Bragt MPA, *et al.* 2005. *Biol. Reprod.* 73:634. (IF, IHC)
10. Umland O, *et al.* 2007. *J. Immunol.* 178:4147.
11. Cridland SO, *et al.* 2009. *Blood Cell. Mol. Dis.* 45:149. (FC) [PubMed](#)
12. Pronk CJ, *et al.* 2011. *J. Exp Med.* [PubMed](#)
13. English A, *et al.* 2000. *J. Immunol.* 165:3763. (IHC)
14. Bamezai A and Rock KL. 1995. *Proc. Natl. Acad. Sci. USA* 92:4294.
15. Wiesner DL, *et al.* 2015. *PLoS Pathog.* 11:1004701. [PubMed](#)

## Product Citations

1. Ho YH, *et al.* 2019. *Cell Stem Cell.* 25:407. [PubMed](#)
2. Grigsby SM, *et al.* 2021. *Cancers (Basel).* 13:. [PubMed](#)
3. Jaiswal AK, *et al.* 2020. *Immunobiology.* 225:151956. [PubMed](#)
4. Baryawno N *et al.* 2019. *Cell.* 177(7):1915-1932. [PubMed](#)
5. Schloss MJ, *et al.* 2022. *Nat Immunol.* 23:605. [PubMed](#)
6. Groenen AG, *et al.* 2022. *J Lipid Res.* 63:100167. [PubMed](#)
7. Chen J, *et al.* 2021. *Sci Adv.* 7:. [PubMed](#)
8. Pessoa Rodrigues C, *et al.* 2021. *Sci Adv.* 7:. [PubMed](#)
9. Forte D, *et al.* 2020. *Cell Metab.* 32:829. [PubMed](#)
10. Sykes DB *et al.* 2016. *Cell.* 167(1):171-186. [PubMed](#)
11. Al-Rifai R, *et al.* 2022. *Nat Commun.* 13:6592. [PubMed](#)
12. Mitchell K, *et al.* 2018. *J Exp Med.* 215:1709. [PubMed](#)
13. Goldsmith JR, *et al.* 2020. *Nat Commun.* 11:2591. [PubMed](#)
14. Fukushima T, *et al.* 2019. *Cell Rep.* 29:4144. [PubMed](#)
15. Koffis K, *et al.* 2020. *British Journal of Pharmacology.* 49(1):66-72. [PubMed](#)
16. Jia W, *et al.* 2021. *Nat Commun.* 12:2118. [PubMed](#)
17. Park D, *et al.* 2020. *Cancer Res.* 80:4172. [PubMed](#)
18. Mansell E, *et al.* 2020. *Cell Stem Cell.* . [PubMed](#)
19. Elahi S, *et al.* 2020. *Stem Cell Res.* 43:101710. [PubMed](#)
20. La Rose AM, *et al.* 2021. *Mol Metab.* 53:101265. [PubMed](#)
21. Yuzugullu H, *et al.* 2015. *Nat Commun.* 6: 8501. [PubMed](#)
22. Runyan CE, *et al.* 2020. *Aging Cell.* 19:00. [PubMed](#)
23. LaFleur MW, *et al.* 2019. *Nat Commun.* 10:1668. [PubMed](#)
24. Thongthip S, *et al.* 2016. *Genes Dev.* 30: 645 - 659. [PubMed](#)
25. Zhou T, *et al.* 2022. *Sci Adv.* 8:eabj9617. [PubMed](#)
26. Nijnik A, *et al.* 2012. *Blood.* 119:1522. [PubMed](#)
27. Koide S, *et al.* 2022. *iScience.* 25:103603. [PubMed](#)
28. Yamashita M, *et al.* 2019. *Cell Stem Cell.* 25:357. [PubMed](#)
29. Chavez JS, *et al.* 2022. *Cells.* 11:. [PubMed](#)
30. Evavold CL, *et al.* 2021. *Cell.* 184(17):4495-4511.e19. [PubMed](#)
31. Radulovic V, *et al.* 2020. *Cell Reports.* 27(10):2826-2836.e5.. [PubMed](#)
32. Severe N *et al.* 2019. *Cell Stem Cell.* 25(4):570-583. [PubMed](#)
33. Dingler FA, *et al.* 2020. *Mol Cell.* . [PubMed](#)
34. Pessoa Rodrigues C, *et al.* 2020. *Sci Adv.* 6:eaaz4815. [PubMed](#)
35. Reyna DE *et al.* 2017. *Cancer cell.* 32(4):490-505. [PubMed](#)
36. Cui Y, *et al.* 2020. *Eur J Pharmacol.* 881:173233. [PubMed](#)

## RRID

AB\_10898327 (BioLegend Cat. No. 108127)  
AB\_2563064 (BioLegend Cat. No. 108128)

## Antigen Details

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<b>Structure</b>	Ly-6 multigene family, 18 kD
<b>Distribution</b>	Hematopoietic stem cells, activated T cells and B cells, subset of resting B cells and T cells
<b>Function</b>	Regulates B and T cell responses
<b>Cell Type</b>	B cells, Hematopoietic stem and progenitors, Mesenchymal Stem Cells, T cells

**Biology Area**

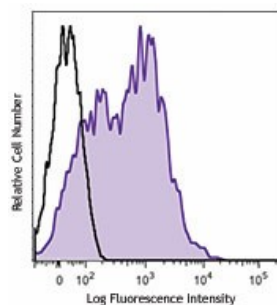
Immunology, Stem Cells

**Antigen References**

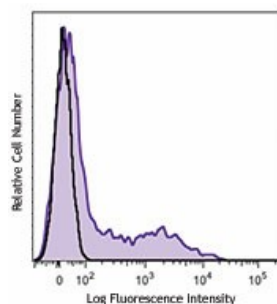
1. Rock KL, *et al.* 1989. *Immunol. Rev.* 111:195.
2. Morrison SJ, *et al.* 1994. *Immunity* 1:661.
3. Spangrude GJ, *et al.* 1988. *J. Immunol.* 141:3697.
4. Malek T, *et al.* 1986. *J. Exp. Med.* 164:709.

**Gene ID**[110454](#)**Related Protocols**[Cell Surface Flow Cytometry Staining Protocol](#)**Other Formats**

APC anti-mouse Ly-6A/E (Sca-1), Biotin anti-mouse Ly-6A/E (Sca-1), FITC anti-mouse Ly-6A/E (Sca-1), PE anti-mouse Ly-6A/E (Sca-1), PE/Cyanine5 anti-mouse Ly-6A/E (Sca-1), Purified anti-mouse Ly-6A/E (Sca-1), PE/Cyanine7 anti-mouse Ly-6A/E (Sca-1), Alexa Fluor® 488 anti-mouse Ly-6A/E (Sca-1), Alexa Fluor® 647 anti-mouse Ly-6A/E (Sca-1), Pacific Blue™ anti-mouse Ly-6A/E (Sca-1), Brilliant Violet 421™ anti-mouse Ly-6A/E (Sca-1), PerCP anti-mouse Ly-6A/E (Sca-1), PerCP/Cyanine5.5 anti-mouse Ly-6A/E (Sca-1), APC/Cyanine7 anti-mouse Ly-6A/E (Sca-1), Brilliant Violet 510™ anti-mouse Ly-6A/E (Sca-1), Brilliant Violet 711™ anti-mouse Ly-6A/E (Sca-1), Brilliant Violet 605™ anti-mouse Ly-6A/E (Sca-1), Purified anti-mouse Ly-6A/E (Sca-1) (Maxpar® Ready), PE/Dazzle™ 594 anti-mouse Ly-6A/E (Sca-1), Brilliant Violet 785™ anti-mouse Ly-6A/E (Sca-1), Alexa Fluor® 700 anti-mouse Ly-6A/E (Sca-1), Brilliant Violet 650™ anti-mouse Ly-6A/E (Sca-1), APC/Fire™ 750 anti-mouse Ly-6A/E (Sca-1), TotalSeq™-A0130 anti-mouse Ly-6A/E (Sca-1), TotalSeq™-B0130 anti-mouse Ly-6A/E (Sca-1), TotalSeq™-C0130 anti-mouse Ly-6A/E (Sca-1)

**Product Data**

C57BL/6 mouse splenocytes were stained with Ly-6A/E (clone D7) Brilliant Violet 421™ (filled histogram) or rat IgG2a, κ Brilliant Violet 421™ isotype control (open histogram).



C57BL/6 mouse bone marrow cells were stained with Ly-6A/E (clone D7) Brilliant Violet 421™ (filled histogram) or rat IgG2a, κ Brilliant Violet 421™ isotype control (open histogram). Data shown was gated on lymphoid cell population.

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