

PE/Cyanine7 anti-mouse Ly-6A/E (Sca-1) Antibody

Catalog# / Size	108113 / 25 µg 108114 / 100 µg
Clone	D7
Regulatory Status	RUO
Other Names	Sca-1
Isotype	Rat IgG2a, κ
Description	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

Verified Reactivity	Mouse
Antibody Type	Monoclonal
Host Species	Rat
Immunogen	IL-2-dependent mouse T-cell line (CTL-L)
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography, and conjugated with PE/Cyanine7 under optimal conditions.
Concentration	0.2 mg/ml
Storage & Handling	The Ly-6A/E antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Application	FC - Quality tested
Recommended Usage	Each lot of this antibody is quality control tested by immunofluorescent staining with flow cytometric analysis . For flow cytometric staining, the suggested use of this reagent is ≤ 0.25 µg per 10 ⁶ cells in 100 µl volume. It is recommended that the reagent be titrated for optimal performance for each application.
Excitation Laser	Blue Laser (488 nm) Green Laser (532 nm)/Yellow-Green Laser (561 nm)
Application Notes	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 ^{1,2} , immunoprecipitation ¹ , <i>in vitro</i> lymphocyte activation ³⁻⁶ , induction of redirected lysis ⁷ , induction of T cell inhibitory signalling ⁸ , immunofluorescence ⁹ , and immunohistochemical staining of acetone-fixed frozen sections ¹³ and Bouin-fixed, paraffin-embedded samples ⁹ . 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. ¹⁴
Additional Product Notes	BioLegend is in the process of converting the name PE/Cy7 to PE/Cyanine7. The dye molecule remains the same, so you should expect the same quality and performance from our PE/Cyanine7 products. Please contact Technical Service if you have any questions.
Application References	1. Ortega G, <i>et al.</i> 1986. <i>J. Immunol.</i> 137:3240. (WB, IP)
(PubMed link indicates	2. Palfree RGE, <i>et al.</i> 1986. <i>Immunogenetics</i> 23:197. (WB)

BioLegend citation)

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. Lang J, *et al.* 2020. *Nat Commun.* 11:1338. [PubMed](#)
2. Wu J, *et al.* 2022. *Stem Cells Int.* 2022:4249843. [PubMed](#)
3. Chappaz S, *et al.* 2021. *Cell Reports.* 36(3):109430. [PubMed](#)
4. Viny AD, *et al.* 2019. *Cell Stem Cell.* 25:682. [PubMed](#)
5. Domingues AF, *et al.* 2020. *Elife.* 9:e51754. [PubMed](#)
6. Tripathi H, *et al.* 2020. *J Mol Cell Cardiol.* 149:95. [PubMed](#)
7. Hu X, *et al.* 2016. *Nat Commun.* 7:13095. [PubMed](#)
8. Yu VWC *et al.* 2016. *Cell.* 167(5):1310-1322. [PubMed](#)
9. Shen Y, *et al.* 2021. *Comput Struct Biotechnol J.* 19:5360. [PubMed](#)
10. Gutiérrez-Gutiérrez Ó, *et al.* 2021. *EMBO Rep.* 22:e52905. [PubMed](#)
11. Dell'Orso S, *et al.* 2021. *STAR Protocols.* 2(2):100451. [PubMed](#)
12. Jtte BB, *et al.* 2021. *iScience.* 24(8):102833. [PubMed](#)
13. Hoffman D, *et al.* 2021. *Immunity.* 54:2712. [PubMed](#)
14. Nakamura-Ishizu A *et al.* 2018. *Cell reports.* 25(7):1772-1785. [PubMed](#)
15. Beauchamp EM, *et al.* 2021. *Blood Cancer Discov.* 6:. [PubMed](#)
16. Campanario S, *et al.* 2021. *Front Cell Dev Biol.* 8:620409. [PubMed](#)
17. Montel-Hagen A, *et al.* 2020. *Cell Rep.* 33:108320. [PubMed](#)
18. Arai F, *et al.* 2020. *Cell Systems.* 11(6):640-652.e5. [PubMed](#)
19. Jassinskaja M, *et al.* 2021. *Cell Reports.* 34(12):108894. [PubMed](#)
20. Ankawa R, *et al.* 2021. *Developmental Cell.* [PubMed](#)
21. Kim SP, *et al.* 2021. *Cell Reports.* 36(9):109626. [PubMed](#)
22. Kunimoto H, *et al.* 2018. *Cancer Cell.* 33:44. [PubMed](#)
23. Solanas G, *et al.* 2017. *Cell.* 170:678. [PubMed](#)
24. Gross ETE, *et al.* 2018. *Oncoimmunology.* 8:e1404212. [PubMed](#)
25. Wang L, *et al.* 2021. *Cancer Immunol Res.* 9:348. [PubMed](#)
26. Yu VWC, *et al.* 2017. *Cell.* 168:944. [PubMed](#)
27. Barman PK, *et al.* 2019. *J Immunol.* 202:2720. [PubMed](#)
28. Kleppe M *et al.* 2018. *Cancer cell.* 33(1):29-43. [PubMed](#)
29. Haase C, *et al.* 2022. *Nat Methods.* 19:1622. [PubMed](#)
30. Kinkel SA, *et al.* 2022. *iScience.* 25:104684. [PubMed](#)
31. Srivastava S, *et al.* 2019. *Cancer Cell.* 35:489. [PubMed](#)
32. Telford W, *et al.* 2017. *Cytometry A.* 91:314. [PubMed](#)
33. Dong S, *et al.* 2021. *Nature.* 591:117. [PubMed](#)
34. Witkowski MT, *et al.* 2020. *Cancer Cell.* 37:867. [PubMed](#)
35. Zhang C, *et al.* 2020. *Cell Rep.* 32:108206. [PubMed](#)
36. Chiba H, *et al.* 2013. *Am J Physiol Cell Physiol.* 305:693. [PubMed](#)
37. Smith E, *et al.* 2009. *J Immunol.* 183:5685. [PubMed](#)
38. García-Prat L, Muñoz-Cánoves P, Martínez-Vicente 2017. *Muscle Stem Cells.* 10.1007/978-1-4939-6771-1_14. [PubMed](#)
39. Zaro BW, *et al.* 2020. *eLife.* 9:00. [PubMed](#)
40. Nosh S, *et al.* 2020. *Int J Mol Sci.* 21:00. [PubMed](#)
41. Duan Y, *et al.* 2018. *Stem Cells.* 36:1430. [PubMed](#)
42. Cho K, *et al.* 2021. *iScience.* 24:103117. [PubMed](#)
43. Dagher T, *et al.* 2021. *J Exp Med.* 218:. [PubMed](#)
44. Yi W, *et al.* 2021. *Cell Reports.* 34(13):108922. [PubMed](#)
45. Gough D, *et al.* 2014. *Blood.* 124:2252. [PubMed](#)
46. Stifter SA, *et al.* 2019. *Cell Rep.* 29:3539. [PubMed](#)
47. Kubota S, *et al.* 2019. *Nat Commun.* 10:1653. [PubMed](#)
48. Chen Z, *et al.* 2019. *J Exp Med.* 216:152. [PubMed](#)
49. Sevin M, *et al.* 2018. *Nat Commun.* 9:1431. [PubMed](#)
50. Bota-Rabassedas N, *et al.* 2021. *Cell Reports.* 35(3):109009. [PubMed](#)
51. Goldstein JM *et al.* 2019. *Cell reports.* 27(4):1254-1264. [PubMed](#)
52. Nowlan B, *et al.* 2019. *Haematologica.* 105:71. [PubMed](#)
53. Girardi R, *et al.* 2015. *Nat Commun.* 6: 8487. [PubMed](#)
54. Matsumura T, *et al.* 2022. *Nat Commun.* 13:7064. [PubMed](#)
55. Wang S, *et al.* 2021. *Commun Biol.* 22:. [PubMed](#)
56. Azazmeh N, *et al.* 2020. *Nat Commun.* 2.340972222. [PubMed](#)
57. Christin JR, *et al.* 2020. *Cell Reports.* 31(10):107742. [PubMed](#)
58. Bellomo A, *et al.* 2020. *Immunity.* 53(1):127-142.e7. [PubMed](#)
59. Onai N, *et al.* 2020. *Int J Mol Sci.* :22. [PubMed](#)
60. Evrard M *et al.* 2018. *Immunity.* 48(2):364-379. [PubMed](#)
61. Kang M, *et al.* 2021. *Front Cell Dev Biol.* 8:596622. [PubMed](#)
62. Omatsu Y, *et al.* 2022. *Nat Commun.* 13:2654. [PubMed](#)
63. Yokomizo-Nakano T, *et al.* 2020. *Cancer Res.* 80:2523. [PubMed](#)

64. Liu F, *et al.* 2021. Cell Reports. 35(10):109225. [PubMed](#)
65. Jin Y, *et al.* 2020. PeerJ. 8:e10374. [PubMed](#)
66. Yosef R, *et al.* 2016. Nat Commun. 7: 11190. [PubMed](#)
67. Christoforou N, *et al.* 2013. PLoS One. 8:65963. [PubMed](#)
68. Zheng Z, *et al.* 2021. Nat Commun. 12:6202. [PubMed](#)
69. Yoshida H, *et al.* 2019. Cell. 176:897. [PubMed](#)
70. Mohrin M, *et al.* 2021. Aging Cell. 20:e13313. [PubMed](#)
71. Yoshinaga M, *et al.* 2022. Nat Commun. 13:6435. [PubMed](#)
72. Kwok I, *et al.* 2020. Immunity. 53(2):303-318.e5. [PubMed](#)
73. Iwanami N, *et al.* 2020. iScience. 23:101260. [PubMed](#)
74. Aryal B, *et al.* 2016. Nat Commun. 7:12313. [PubMed](#)
75. Jin J, *et al.* 2020. Cell Reports. 30(12):4124-4136. [PubMed](#)
76. Yamashita M, *et al.* 2019. Cell Stem Cell. 25:357. [PubMed](#)
77. Chavez JS, *et al.* 2022. Cells. 11: . [PubMed](#)
78. Fielding C, *et al.* 2022. Nat Commun. 13:543. [PubMed](#)
79. Kang YA, *et al.* 2020. J Exp Med. 217:00:00. [PubMed](#)
80. Lerbs T, *et al.* 2020. JCI Insight. 5:00. [PubMed](#)
81. Del Barco Barrantes I, *et al.* 2018. Stem Cell Reports. 10:257. [PubMed](#)
82. Zhang B, *et al.* 2021. Nature. 599:471. [PubMed](#)
83. Tan DQ, *et al.* 2019. Cell Rep. 26:2316. [PubMed](#)
84. Yáñez A *et al.* 2017. Immunity. 47(5):890-902 . [PubMed](#)
85. Aurélien Trompette *et al.* 2018. Immunity. 48(5):992-1005 . [PubMed](#)
86. Youssif C, *et al.* 2018. EMBO Mol Med. 10:e8403. [PubMed](#)
87. Hacein-Bey-Abina S, *et al.* 2020. Exp Hematol. 88:15. [PubMed](#)
88. Man N, *et al.* 2021. JCI Insight. 6: . [PubMed](#)

RRID AB_493597 (BioLegend Cat. No. 108113)
 AB_493596 (BioLegend Cat. No. 108114)

Antigen Details

Structure	Ly-6 multigene family, 18 kD
Distribution	Hematopoietic stem cells, activated T cells and B cells, subset of resting B cells and T cells
Function	Regulates B and T cell responses
Cell Type	B cells, Hematopoietic stem and progenitors, Mesenchymal Stem Cells, T cells
Biology Area	Immunology, Stem Cells
Antigen References	<ol style="list-style-type: none"> 1. Rock KL, <i>et al.</i> 1989. <i>Immunol. Rev.</i> 111:195. 2. Morrison SJ, <i>et al.</i> 1994. <i>Immunity</i> 1:661. 3. Spangrude GJ, <i>et al.</i> 1988. <i>J. Immunol.</i> 141:3697. 4. Malek T, <i>et al.</i> 1986. <i>J. Exp. Med.</i> 164:709.
Gene ID	110454

Related Protocols

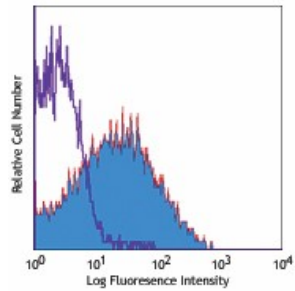
[Cell Surface Flow Cytometry Staining Protocol](#)

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 stained with D7 PE/Cyanine7



For research use only. Not for diagnostic use. Not for resale. BioLegend will not be held responsible for patent infringement or other violations that may occur with the use of our products.

*These products may be covered by one or more Limited Use Label Licenses (see the BioLegend Catalog or our website, www.biolegend.com/ordering#license). BioLegend products may not be transferred to third parties, resold, modified for resale, or used to manufacture commercial products, reverse engineer functionally similar materials, or to provide a service to third parties without written approval of BioLegend. By use of these products you accept the terms and conditions of all applicable Limited Use Label Licenses. Unless otherwise indicated, these products are for research use only and are not intended for human or animal diagnostic, therapeutic or commercial use.

BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587