

## FITC anti-human CD90 (Thy1) Antibody

<b>Catalog# / Size</b>	328107 / 25 tests 328108 / 100 tests
<b>Clone</b>	5E10
<b>Regulatory Status</b>	RUO
<b>Workshop</b>	HCDM listed
<b>Other Names</b>	Thy-1, Thy1
<b>Isotype</b>	Mouse IgG1, $\kappa$
<b>Description</b>	CD90 is a 25-35 kD GPI-anchored protein, also known as Thy-1. It belongs to the Ig superfamily. Human CD90 is expressed on neuronal cells, a subset of CD34 <sup>+</sup> cells, a subset of fetal liver cells and fetal thymocytes, fibroblasts, activated endothelial cells, and some leukemia cell lines. CD34 <sup>+</sup> CD90 <sup>+</sup> cells are primitive hematopoietic stem cells. It has been reported that Thy-1 binds with $\beta$ 2 and $\beta$ 3 integrins and plays bimodal roles in the regulation of cell adhesion and neurite outgrowth, and inhibits hematopoietic stem cells proliferation and differentiation.

### Product Details

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<b>Verified Reactivity</b>	Human
<b>Reported Reactivity</b>	African Green, Baboon, Cynomolgus, Pigtailed Macaque, Rhesus, Pig
<b>Antibody Type</b>	Monoclonal
<b>Host Species</b>	Mouse
<b>Immunogen</b>	HEL cells
<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 FITC under optimal conditions.
<b>Concentration</b>	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 flow cytometric staining, the suggested use of this reagent is 5 $\mu$ l per million cells in 100 $\mu$ l staining volume or 5 $\mu$ l per 100 $\mu$ l of whole blood.
<b>Excitation Laser</b>	Blue Laser (488 nm)
<b>Application Notes</b>	Clone 5E10 recognizes an epitope on Thy-1 independent of its glycosylation, but is abolished under reducing conditions. <sup>4</sup> Additional reported (for the relevant formats) applications include: immunohistochemical staining of acetone-fixed frozen sections, immunoprecipitation <sup>1</sup> , and immunofluorescence <sup>3</sup> .
<b>Application References</b>	<ol style="list-style-type: none"> <li>1. Craig W, <i>et al.</i> 1993. <i>J. Exp. Med.</i> 177:1331. (IP)</li> <li>2. Gundlach CW 4th, <i>et al.</i> 2011. <i>Bioconjug. Chem.</i> 22:1706. (Pig Reactivity)</li> <li>3. Touboul C, <i>et al.</i> 2013. <i>J. Transl. Med.</i> 11:28. (IF)</li> <li>4. Bradley JE, <i>et al.</i> 2013. <i>Lab Invest.</i> 93:365. (Epitope)</li> <li>5. Donnenberg VS, <i>et al.</i> 2010. <i>Cytometry B. Clin. Cytom.</i> 5:287. (IHC)</li> </ol>
<b>(PubMed link indicates BioLegend citation)</b>	

### Product Citations

1. Camerlingo R, *et al.* 2011. *Lung Cancer.* 72:23. [PubMed](#)
2. Peng K, *et al.* 2020. *Sci Rep.* 10:18433. [PubMed](#)

3. Yan H, *et al.* 2020. *Adv Sci (Weinh)*. 7:1903516. [PubMed](#)
4. Xin Y, *et al.* 2021. *Stem Cell Res Ther*. 49:12. [PubMed](#)
5. Miksiunas R, *et al.* 2021. *Int J Mol Sci*. 22:.. [PubMed](#)
6. Wu J, *et al.* 2022. *Nat Commun*. 13:676. [PubMed](#)
7. Li L, *et al.* 2015. *Int J Pharmaceutics*. 488: 1-11. [PubMed](#)
8. Liu X, *et al.* 2020. *Exp Ther Med*. 1.258333333. [PubMed](#)
9. Radhakrishnan S, *et al.* 2019. *Mol Med Rep*. 20:813. [PubMed](#)
10. Chen X, *et al.* 2022. *Front Bioeng Biotechnol*. 10:915181. [PubMed](#)
11. Yu XX, *et al.* 2021. *Cell Res*. 31:886. [PubMed](#)
12. Shi L, *et al.* 2021. *Stem Cell Res Ther*. 12:147. [PubMed](#)
13. Tu S, *et al.* 2020. *Cellular Signalling*. 73:109695. [PubMed](#)
14. Vishnoi M, *et al.* 2018. *Cancer Res*. 78:5349. [PubMed](#)
15. Huang X, *et al.* 2019. *Oxid Med Cell Longev*. 2019:1305049. [PubMed](#)
16. Guney-Esken G, *et al.* 2021. *Stem Cell Res Ther*. 12:287. [PubMed](#)
17. Qin XY, *et al.* 2020. *Cell Death Dis*. 0.504166667. [PubMed](#)
18. Takao T, *et al.* 2022. *STAR Protoc*. 3:101786. [PubMed](#)
19. Nguyen MAT, *et al.* 2020. *Immunohorizons*. 0.465277778. [PubMed](#)
20. Hwang Y, *et al.* 2021. *Int J Mol Sci*. 22:.. [PubMed](#)
21. Dregalla RC, *et al.* 2021. *Stem Cell Res Ther*. 12:547. [PubMed](#)
22. Han X, *et al.* 2020. *Int J Oral Sci*. 12:10. [PubMed](#)
23. Liu Z, *et al.* 2021. *Molecules*. 26:.. [PubMed](#)
24. Hanse E, *et al.* 2017. *Oncogene*. 10.1038/onc.2017.36. [PubMed](#)
25. Sun W, *et al.* 2019. *Exp Ther Med*. 17:2199. [PubMed](#)
26. Liu Y, *et al.* 2022. *iScience*. 25:104405. [PubMed](#)
27. DAgostino S, *et al.* 2021. *Frontiers in Oncology*. 10:600980. [PubMed](#)
28. Kinchen J *et al.* 2018. *Cell*. 175(2):372-386 . [PubMed](#)
29. Gao P, *et al.* 2017. *Cytotechnology*. 69:751. [PubMed](#)
30. Nguyen JT, *et al.* 2019. *iScience*. 17:190. [PubMed](#)
31. Yu C, *et al.* 2020. *Sci Rep*. 10:14521. [PubMed](#)
32. Yan K, *et al.* 2022. *iScience*. 25:104822. [PubMed](#)
33. Duan X, *et al.* 2022. *Cell Biosci*. 12:60. [PubMed](#)
34. Zhang S, *et al.* 2021. *Stem Cells Int*. 6616240:2021. [PubMed](#)
35. Yang C *et al.* 2019. *Int J Mol Med*. 43(3):1395-1405 . [PubMed](#)
36. Fawcner-Corbett D, *et al.* 2021. *STAR Protoc*. 2:100890. [PubMed](#)
37. Tidu F, *et al.* 2021. *iScience*. 24(6):102683. [PubMed](#)
38. Ayhan S, *et al.* 2021. *Journal of Cell Science*. 134(6):. [PubMed](#)
39. Noz MP, *et al.* 2020. *Elife*. 9:00. [PubMed](#)
40. Zhang Y, *et al.* 2018. *Stem Cells Int*. 2018:7159465. [PubMed](#)
41. Zhang Y, *et al.* 2019. *Aging (Albany NY)*. 11:12641. [PubMed](#)
42. Cai S, *et al.* 2022. *Cell Biosci*. 12:115. [PubMed](#)
43. Keshtkar S, *et al.* 2021. *Stem Cells Int*. 8857457:2020. [PubMed](#)
44. Okamura G, *et al.* 2020. *Int J Mol Sci*. 22:00. [PubMed](#)
45. Zhang H, *et al.* 2017. *Oncogene*. 10.1038/onc.2016.512. [PubMed](#)
46. Sun T, *et al.* 2019. *Haematologica*. 105:661. [PubMed](#)
47. Motedayyeh H, *et al.* 2017. *BMC Res Notes*. . 10.1186/s13104-017-2880-6. [PubMed](#)
48. Narakornsak S, *et al.* 2017. *Acta Histochemica*. 10.1016/j.acthis.2017.04.006. [PubMed](#)
49. Guney-Esken G, *et al.* 2021. *Methods Mol Biol*. 2549:23. [PubMed](#)
50. Aomatsu E, *et al.* 2014. *Sci Rep*. 4:3652. [PubMed](#)
51. Fawcner-Corbett D, *et al.* 2021. *Cell*. 184(3):810-826.e23. [PubMed](#)
52. He Z, *et al.* 2020. *J Exp Clin Cancer Res*. 39:140. [PubMed](#)
53. Xu L, *et al.* 2022. *Int J Mol Sci*. 23:.. [PubMed](#)
54. Miksiunas R, *et al.* 2022. *Cells*. 11:.. [PubMed](#)
55. Meng Z, *et al.* 2013. *Mol Cancer Ther*. 12:2067. [PubMed](#)
56. He H, *et al.* 2019. *J Cell Mol Med*. 23:4139. [PubMed](#)
57. Zhu YP *et al.* 2018. *Cell reports*. 24(9):2329-2341 . [PubMed](#)
58. Vishnoi M, *et al.* 2019. *Mol Oncol*. 13(9): 1913. [PubMed](#)
59. Pauken CM, *et al.* 2021. *Cancers (Basel)*. 13:.. [PubMed](#)
60. Miksiunas R, *et al.* 2020. *Int J Mol Sci*. 21:00. [PubMed](#)
61. Luzuriaga J, *et al.* 2020. *Biomedicines*. 8:00. [PubMed](#)
62. Putra I, *et al.* 2021. *Transl Vis Sci Technol*. 10:3. [PubMed](#)
63. Matheni C, *et al.* 2021. *Cell J*. 23:145. [PubMed](#)
64. Dinh HQ, *et al.* 2020. *Immunity*. 53(2):319-334.e6. [PubMed](#)
65. Hong Y, *et al.* 2020. *Aging Cell*. 19:e13128. [PubMed](#)
66. Thiel A, *et al.* 2015. *Sci Rep*. 5: 17685. [PubMed](#)
67. Sprouse ML, *et al.* 2019. *Int J Mol Sci*. 20:8. [PubMed](#)
68. Chijimatsu R, *et al.* 2022. *Regen Ther*. 21:52. [PubMed](#)
69. Shang W, *et al.* 2022. *Dis Markers*. 2022:7286645. [PubMed](#)
70. Khanh VC, *et al.* 2021. *Stem Cells Dev*. 30:758. [PubMed](#)

#### RRID

AB\_893438 (BioLegend Cat. No. 328107)  
 AB\_893429 (BioLegend Cat. No. 328108)

## Antigen Details

#### Structure

25-35 kD glycoprotein, Ig superfamily

<b>Distribution</b>	Subset of CD34 <sup>+</sup> hematopoietic stem cells, subset of fetal thymocytes, subset of fetal liver cells, fibroblast, activated endothelial cells, neurons and some leukemia cell lines
<b>Function</b>	Regulate hematopoiesis and neural cell growth, cell adhesion
<b>Ligand/Receptor</b>	β3 integrin, β2 integrin
<b>Cell Type</b>	Endothelial cells, Fibroblasts, Hematopoietic stem and progenitors, Leukemia, Mesenchymal Stem Cells, Neurons, Thymocytes
<b>Biology Area</b>	Immunology, Stem Cells
<b>Molecular Family</b>	CD Molecules
<b>Antigen References</b>	<ol style="list-style-type: none"> <li>1. McKenzie JL, et al. 1981. <i>J. Immunol.</i> 126:843.</li> <li>2. Avalos AM, et al. 2002. <i>Biol. Res.</i> 35:231.</li> <li>3. Wetzel A, et al. 2004. <i>J. Immunol.</i> 172:3850.</li> </ol>
<b>Gene ID</b>	<a href="#">7070</a>

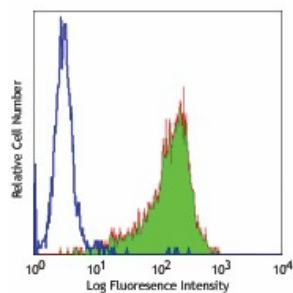
## Related Protocols

[Cell Surface Flow Cytometry Staining Protocol](#)

## Other Formats

PE/Cyanine7 anti-human CD90 (Thy1), Purified anti-human CD90 (Thy1), Biotin anti-human CD90 (Thy1), FITC anti-human CD90 (Thy1), PE anti-human CD90 (Thy1), PE/Cyanine5 anti-human CD90 (Thy1), APC anti-human CD90 (Thy1), Alexa Fluor® 647 anti-human CD90 (Thy1), PerCP/Cyanine5.5 anti-human CD90 (Thy1), Alexa Fluor® 700 anti-human CD90 (Thy1), Brilliant Violet 421™ anti-human CD90 (Thy1), Brilliant Violet 510™ anti-human CD90 (Thy1), Brilliant Violet 605™ anti-human CD90 (Thy1), Purified anti-human CD90 (Thy1) (Maxpar® Ready), APC/Cyanine7 anti-human CD90 (Thy1), PE/Dazzle™ 594 anti-human CD90 (Thy1), APC/Fire™ 750 anti-human CD90 (Thy1), Brilliant Violet 711™ anti-human CD90 (Thy1), TotalSeq™-A0060 anti-human CD90 (Thy1), Brilliant Violet 785™ anti-human CD90 (Thy1), Brilliant Violet 650™ anti-human CD90 (Thy1), TotalSeq™-C0060 anti-human CD90 (Thy1), TotalSeq™-B0060 anti-human CD90 (Thy1), TotalSeq™-D0060 anti-human CD90 (Thy1)

## Product Data



Human erythroleukemic cell line (HEL)  
stained with 5E10 FITC

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