Technical Data Sheet

PerCP Mouse Anti-Rat CD90/Mouse CD90.1

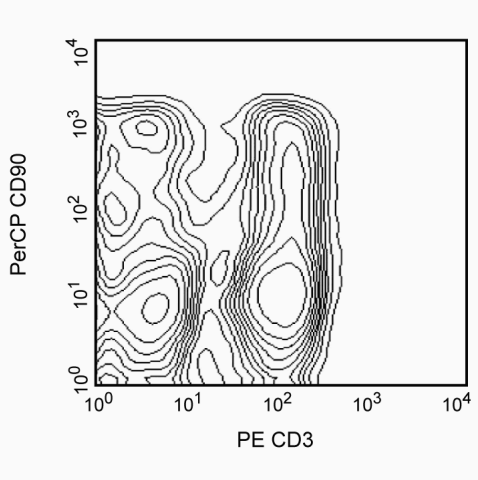
Product Information

Material Number:	**557266**
Alternate Name:	Rat Thy-1; Mouse Thy-1.1
Size:	0.1 mg
Concentration:	0.2 mg/ml
Clone:	OX-7
Immunogen:	Rat Thymocyte Thy-1 Antigen
Isotype:	Mouse (BALB/c) IgG1, κ
Reactivity:	QC Testing: Rat Tested During Development: Mouse Reported: Guinea Pig, Rabbit
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

CD90 (Thy-1) is a GPI-anchored membrane glycoprotein of the Ig superfamily which is involved in signal transduction. The OX-7 monoclonal antibody specifically binds to rat CD90 reported to be expressed by hematopoietic stem cells, early myeloid & erythroid cells, immature B lymphocytes in the bone marrow & peripheral lymphoid organs, thymocytes, recent thymic emigrants (a subset of CD45RC- peripheral T lymphocytes), neurons, glomerular mesangial cells, endothelium at inflammatory sites, mast cells, and dendritic cells. Rat dendritic epidermal T cells (DEC) have been reported to be CD90 (Thy-1) negative, unlike those of the mouse.

The OX-7 clone has been reported to crossreact with the mouse CD90.1 (Thy-1.1) alloantigen of the AKR/J and PL strains, but not CD90.2 (Thy-1.2) found on many mouse strains. In the mouse, CD90 is found on thymocytes, most peripheral T lymphocytes, some intraepithelial T lymphocytes (IEL, DEC), hematopoietic stem cells, and neurons, but not B lymphocytes. In addition, there is evidence that CD90 mediates adhesion of mouse thymocytes to mouse thymic stroma. The OX-7 clone has also been reported to crossreact with rabbit and guinea pig thymus, brain, and intestine.



Two-color analysis of the expression of CD90 on rat splenic leukocytes. *Lewis splenocytes were stained with PerCP mouse anti-rat CD90/mouse CD90.1 (clone OX-7) and PE mouse anti-rat CD3 (clone G4.18) (Cat. No. 554833) monoclonal antibodies. Flow cytometry was performed on a BD FACScan™ instrument.*

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

The antibody was conjugated with PerCP under optimum conditions, and unconjugated antibody and free PerCP were removed. Storage of PerCP conjugates in unoptimized diluent is not recommended and may result in loss of signal intensity.

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

BD Biosciences

bdbiosciences.com

United States	Canada	Europe	Japan	Asia Pacific	Latin America/Caribbean
877.232.8995	888.268.5430	32.53.720.550	0120.8555.90	65.6861.0633	0800.771.7157

For country-specific contact information, visit **bdbiosciences.com/how_to_order/**

Application Notes

Application

Flow cytometry	Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
554833	PE Mouse Anti-Rat CD3	0.2 mg	G4.18
550672	PerCP Mouse IgG1 κ Isotype Control	0.1 mg	MOPC-31C

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/colors.
4. PerCP is a photosynthetic accessory pigment from Glenodinium species of dinoflagellates, which is excited by the 488-nm light of an Argon ion laser and fluoresces at 675 nm. Therefore, PerCP-labelled antibodies can be used with FITC- and R-PE–labelled reagents in most single-laser flow cytometers with no significant spectral overlap of PerCP fluorescence with that of FITC or R-PE. PerCP has been reported to undergo significant photobleaching, the magnitude of which increases as laser power is increased or beam focus is narrowed. For third-color flow¬cytometric analysis using ≥25-mW laser power, we recommend PE-Cy5-, PE-Cy7–, or PerCP-Cy5.5-conjugated reagents.
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

Afar B, Merrill J, Clark EA. Detection of lymphocyte subsets using three-color/single-laser flow cytometry and the fluorescent dye peridinin chlorophyll-alpha protein. *J Clin Immunol.* 1991; 11(5):254-261. (Methodology: Flow cytometry)

Bañuls MP, Alvarez A, Ferrero I, Zapata A, Ardavin C. Cell-surface marker analysis of rat thymic dendritic cells. *Immunology.* 1993; 79(2):298-304. (Biology)

Campbell DG, Gagnon J, Reid KB, Williams AF. Rat brain Thy-1 glycoprotein. The amino acid sequence, disulphide bonds and an unusual hydrophobic region. *Biochem J.* 1981; 195(1):15-30. (Biology)

Chen-Woan M, Delaney CP, Fournier V, et al. In vitro characterization of rat bone marrow-derived dendritic cells and their precursors. *J Leukoc Biol.* 1996; 59(2):196-207. (Biology)

Crook K and Hunt SV. Enrichment of early fetal-liver hemopoietic stem cells of the rat using monoclonal antibodies against the transferrin receptor, Thy-1, and MRC-OX82. *Dev Immunol.* 1996; 4:235-246. (Biology)

Dráberová L, Amoui M, and Dráber P. Thy-1-mediated activation of rat mast cells: the role of Thy-1 membrane microdomains. *Immunology.* 1996; 87(1):141-148. (Clone-specific: Activation, Western blot)

Elbe A, Kilgus O, Hünig T, and Stingl G. T-cell receptor diversity in dendritic epidermal T cells in the rat. *J Invest Dermatol.* 1993; 102:74-79. (Biology)

Ferrero I, Bañnuls M, Alvarez A, Ardavín C. Rat thymic dendritic cells: cell surface marker variations in culture. *Immunol Lett.* 1993; 37(2-3):241-247. (Biology)

Garnett D, Barclay AN, Carmo AM, Beyers AD. The association of the protein tyrosine kinases p56lck and p60fyn with the glycosyl phosphatidylinositol-anchored proteins Thy-1 and CD48 in rat thymocytes is dependent on the state of cellular activation. *Eur J Immunol.* 1993; 23(10):2540-2544. (Clone-specific: Immunoprecipitation)

Greimers R, Trebak M, Moutschen M, Jacobs N, Boniver J. Improved four-color flow cytometry method using fluo-3 and triple immunofluorescence for analysis of intracellular calcium ion ([Ca2+]i) fluxes among mouse lymph node B- and T-lymphocyte subsets. *Cytometry.* 1996; 23(3):205-217. (Methodology: Flow cytometry)

He HT, Naquet P, Caillol D, Pierres M. Thy-1 supports adhesion of mouse thymocytes to thymic epithelial cells through a Ca2(+)-independent mechanism. *J Exp Med.* 1991; 173(2):515-518. (Biology)

Hermans MH, Opstelten D. In situ visualization of hemopoietic cell subsets and stromal elements in rat and mouse bone marrow by immunostaining of frozen sections. *J Histochem Cytochem.* 1991; 39(12):1627-1634. (Clone-specific: Immunohistochemistry)

Hosseinzadeh H, Goldschneider I. Recent thymic emigrants in the rat express a unique antigenic phenotype and undergo post-thymic maturation in peripheral lymphoid tissues. *J Immunol.* 1993; 150(5):1670-1679. (Biology)

Ishizu A, Ishikura H, Nakamaru Y et al. Thy-1 induced on rat endothelium regulates vascular permeability at sites of inflammation. *Int Immunol.* 1995; 7:1939-1947. (Clone-specific: Immunoprecipitation)

Kawachi H, Orikasa M, Matsui K, et al. Epitope-specific induction of mesangial lesions with proteinuria by a MoAb against mesangial cell surface antigen. *Clin Exp Immunol.* 1992; 88(3):399-404. (Clone-specific: Western blot)

Liu L, Zhang M, Jenkins C, MacPherson GG. Dendritic cell heterogeneity in vivo: two functionally different dendritic cell populations in rat intestinal lymph can be distinguished by CD4 expression. *J Immunol.* 1998; 161(3):1146-1155. (Biology)

Mason DW, Williams AF. The kinetics of antibody binding to membrane antigens in solution and at the cell surface. *Biochem J.* 1980; 187(1):1-20. (Immunogen)

Nakashima I, Zhang YH, Rahman SM, et al. Evidence of synergy between Thy-1 and CD3/TCR complex in signal delivery to murine thymocytes for cell death. *J Immunol.* 1991; 147(4):1153-1162. (Biology: Activation)

Paul LC, Rennke HG, Milford EL, and Carpenter CB. Thy-1.1 in glomeruli of rat kidneys. *Kidney Int.* 1984; 25:771-777. (Clone-specific: Electron microscopy, Immunohistochemistry)

Payer E, Elbe A, Stingl G. Circulating CD3+/T cell receptor V gamma 3+ fetal murine thymocytes home to the skin and give rise to proliferating dendritic epidermal T cells. *J Immunol.* 1991; 146(8):2536-2543. (Biology)

Shapiro HM. *Practical Flow Cytometry, 3rd Edition.* New York: Wiley-Liss, Inc; 1995:280-281. (Methodology: Flow cytometry)

Waggoner AS, Ernst LA, Chen CH, Rechtenwald DJ. PE-CY5. A new fluorescent antibody label for three-color flow cytometry with a single laser. *Ann N Y Acad Sci.* 1993; 677:185-193. (Methodology: Flow cytometry)