

Datasheet: MCA90T

BATCH NUMBER 170036

Description:	MOUSE ANTI HUMAN CD90
Specificity:	CD90
Other names:	THY1
Format:	Purified
Product Type:	Monoclonal Antibody
Clone:	F15-42-1
Isotype:	IgG1
Quantity:	20 µg

Product Details

Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit www.bio-rad-antibodies.com/protocols.

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	▪			1/10 - 1/50
Immunohistology - Frozen (1)	▪			
Immunohistology - Paraffin		▪		
Immunoprecipitation	▪			
Immunofluorescence	▪			

Where this antibody has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. The suggested working dilution is given as a guide only. It is recommended that the user titrates the antibody for use in their own system using appropriate negative/positive controls.

(1)The epitope recognised by this antibody is reported to be sensitive to formaldehyde fixation and tissue processing. Bio-Rad recommends the use of acetone fixation for frozen sections.

Target Species

Human

Species Cross Reactivity

Reacts with: Cynomolgus monkey

N.B. Antibody reactivity and working conditions may vary between species. Cross reactivity is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information.

Product Form	Purified IgG - liquid
Preparation	Purified IgG prepared by affinity chromatography on Protein A from tissue culture supernatant
Buffer Solution	Phosphate buffered saline
Preservative Stabilisers	0.09% Sodium Azide
Carrier Free	Yes
Approx. Protein Concentrations	IgG concentration 1.0 mg/ml
Immunogen	Purified human brain Thy-1.
External Database Links	<p>UniProt: P04216 Related reagents</p> <p>Entrez Gene: 7070 THY1 Related reagents</p>
RRID	AB_871985
Fusion Partners	Spleen cells from immunized BALB/c mice were fused with cells of the mouse NS-1 myeloma cell line.
Specificity	<p>Mouse anti Human CD90 antibody, clone F15-42-1 recognizes the human CD90 cell surface antigen, a ~25 kDa glycoprotein homologous to rat Thy1. The antigen is expressed by a subset of CD34+ve cells in the bone marrow and by prothymocytes within the thymus. CD90 is also expressed extensively within the brain.</p> <p>Mouse anti Human CD90 antibody, clone F15-42-1 is routinely tested in flow cytometry on the MOLT4 cell line.</p>
Flow Cytometry	Use 10ul of the suggested working dilution to label 10 ⁶ cells in 100ul.
Histology Positive Control Tissue	Human Brain, thymus
References	<ol style="list-style-type: none"> Daar, A.S. & Fabre, J.W. (1981) Demonstration with monoclonal antibodies of an unusual mononuclear cell infiltrate and loss of normal epithelial membrane antigens in human breast carcinomas. Lancet. 2 (8244): 434-8. Fiegel, H.C. <i>et al.</i> (2004) Stem-like cells in human hepatoblastoma. J Histochem Cytochem. 52 (11): 1495-501. Hagood, J.S. <i>et al.</i> (2005) Loss of fibroblast Thy-1 expression correlates with lung fibrogenesis. Am J Pathol. 167 (2): 365-79.

4. Tome, M. *et al.* (2007) Calponin is expressed by subpopulations of connective tissue cells but not olfactory ensheathing cells in the neonatal olfactory mucosa. [BMC Neurosci. 8: 74.](#)
5. Diaz-Romero, J. *et al.* (2008) Immunophenotypic changes of human articular chondrocytes during monolayer culture reflect bona fide dedifferentiation rather than amplification of progenitor cells. [J Cell Physiol. 214: 75-83.](#)
6. Pessina, A. *et al.* (2010) CD45+/CD133+ positive cells expanded from umbilical cord blood expressing PDX-1 and markers of pluripotency. [Cell Biol Int. 34: 783-90.](#)
7. Manochantr, S. *et al.* (2010) Isolation, characterization and neural differentiation potential of amnion derived mesenchymal stem cells. [J Med Assoc Thai. 93 Suppl 7: S183-91.](#)
8. Karlsen, T.A. *et al.* (2010) Human primary articular chondrocytes, chondroblasts-like cells, and dedifferentiated chondrocytes: differences in gene, microRNA, and protein expression and phenotype. [Tissue Eng Part C Methods. 17: 219-27.](#)
9. Hauser, P.V. *et al.* (2010) Stem cells derived from human amniotic fluid contribute to acute kidney injury recovery. [Am J Pathol. 177: 2011-21.](#)
10. Yin, S. *et al.* (2010) Chondrogenic transdifferentiation of human dermal fibroblasts stimulated with cartilage-derived morphogenetic protein 1. [Tissue Eng Part A. 16: 1633-43.](#)
11. Gieseke, F. *et al.* (2010) Human multipotent mesenchymal stromal cells use galectin-1 to inhibit immune effector cells. [Blood. 116: 3770-9.](#)
12. Holzwarth, C. *et al.* (2010) Low physiologic oxygen tensions reduce proliferation and differentiation of human multipotent mesenchymal stromal cells. [BMC Cell Biol. 11:11](#)
13. Meng, J. *et al.* (2011) Contribution of human muscle-derived cells to skeletal muscle regeneration in dystrophic host mice. [PLoS One. 6: e17454.](#)
14. Cizeau, J. *et al.* (2011) Fusogenics: a recombinant immunotoxin-based screening platform to select internalizing tumor-specific antibody fragments. [J Biomol Screen. 16: 90-100.](#)
15. Cox, G. *et al.* (2011) The use of the reamer-irrigator-aspirator to harvest mesenchymal stem cells. [J Bone Joint Surg Br. 93: 517-24.](#)
16. Shafaei, H. *et al.* (2011) Effects of human placental serum on proliferation and morphology of human adipose tissue-derived stem cells. [Bone Marrow Transplant. 46: 1464-71.](#)
17. Paul, G. *et al.* (2012) The adult human brain harbors multipotent perivascular mesenchymal stem cells. [PLoS One. 7: e35577.](#)
18. Supokawej, A. *et al.* (2013) Cardiogenic and myogenic gene expression in mesenchymal stem cells after 5-azacytidine treatment. [Turk J Haematol. 30 \(2\): 115-21.](#)
19. Escobar, C.H. & Chaparro, O. (2016) Xeno-Free Extraction, Culture, and Cryopreservation of Human Adipose-Derived Mesenchymal Stem Cells. [Stem Cells Transl Med. 5 \(3\): 358-65.](#)
20. Shinoda, K. *et al.* (2016) Thy1+IL-7+ lymphatic endothelial cells in iBALT provide a survival niche for memory T-helper cells in allergic airway inflammation. [Proc Natl Acad Sci U S A. 113 \(20\): E2842-51.](#)
21. Kamprom, W. *et al.* (2016) Endothelial Progenitor Cell Migration-Enhancing Factors in the Secretome of Placental-Derived Mesenchymal Stem Cells. [Stem Cells Int. 2016: 2514326.](#)
22. Vaquero, J. *et al.* (2016) An approach to personalized cell therapy in chronic complete

- paraplegia: The Puerta de Hierro phase I/II clinical trial. [Cytotherapy. 18 \(8\): 1025-36.](#)
23. Zhang, X. *et al.* (2017) Regeneration of hyaline-like cartilage in situ with SOX9 stimulation of bone marrow-derived mesenchymal stem cells. [PLoS One. 12 \(6\): e0180138.](#)
24. Garikipati, V. N.S. *et al.* (2018) Isolation and characterization of mesenchymal stem cells from human fetus heart. [PLoS One. 13 \(2\): e0192244.](#)
25. Chaturvedi, C.P. *et al.* (2018) Altered Expression of Hematopoiesis Regulatory Molecules in Lipopolysaccharide-Induced Bone Marrow Mesenchymal Stem Cells of Patients with Aplastic Anemia. [Stem Cells Int. 2018: 6901761.](#)
26. Noda, S. *et al.* (2019) Effect of cell culture density on dental pulp-derived mesenchymal stem cells with reference to osteogenic differentiation. [Sci Rep. 9 \(1\): 5430.](#)
27. Song, H. *et al.* (2019) MIF/CD74 axis participates in inflammatory activation of Schwann cells following sciatic nerve injury. [J Mol Histol. 50 \(4\): 355-67.](#)
28. Paiboon, N. *et al.* (2019) Gestational Tissue-Derived Human Mesenchymal Stem Cells Use Distinct Combinations of Bioactive Molecules to Suppress the Proliferation of Human Hepatoblastoma and Colorectal Cancer Cells. [Stem Cells Int. 2019: 9748795.](#)
29. Sanjurjo-Rodriguez, C. *et al.* (2020) Gene Expression Signatures of Synovial Fluid Multipotent Stromal Cells in Advanced Knee Osteoarthritis and Following Knee Joint Distraction. [Front Bioeng Biotechnol. 8: 579751.](#)
30. Fujii-Tezuka, R. *et al.* (2021) Umbilical artery tissue contains p75 neurotrophin receptor-positive pericyte-like cells that possess neurosphere formation capacity and neurogenic differentiation potential. [Regen Ther. 16: 1-11.](#)
31. Orikasa, S. *et al.* (2022) Hypoxia-inducible factor 1 α induces osteo/odontoblast differentiation of human dental pulp stem cells via Wnt/ β -catenin transcriptional cofactor BCL9. [Sci Rep. 12 \(1\): 682.](#)
32. Sirithammajak, S. *et al.* (2022) Human Mesenchymal Stem Cells Derived from the Placenta and Chorion Suppress the Proliferation while Enhancing the Migration of Human Breast Cancer Cells. [Stem Cells Int. 2022: 4020845.](#)
33. Arenal, Á. *et al.* (2022) Effects of Cardiac Stem Cell on Postinfarction Arrhythmogenic Substrate. [Int J Mol Sci. 23 \(24\): 16211.](#)
34. Kruchen, A. *et al.* (2023) Epigenetic Modification of Mesenchymal Stromal Cells Derived from Bone Marrow and Embryonal Tumors to Facilitate Immunotherapeutic Approaches in Pediatric Malignancies. [Curr Issues Mol Biol. 45 \(3\): 2121-35.](#)
35. Payet, M. *et al.* (2023) Inflammatory Mesenchymal Stem Cells Express Abundant Membrane-Bound and Soluble Forms of C-Type Lectin-like CD248. [Int J Mol Sci. 24 \(11\): 9546.](#)
36. Tiraihi, T. *et al.* (2023) A Sequential Culturing System for Generating Epithelial-Like Stem Cells from Human Mesenchymal Stem Cells Derived from Adipose Tissue [Cell Tissue Biol. 17 \(6\): 639-52.](#)
37. Tripathy, N.K. *et al.* (2018) Cardiomyogenic Heterogeneity of Clonal Subpopulations of Human Bone Marrow Mesenchymal Stem Cells. [J Stem Cells Regen Med. 14 \(1\): 27-33.](#)
38. Altaie, A. *et al.* (2022) Device-Based Enrichment of Knee Joint Synovial Cells to Drive MSC Chondrogenesis Without Prior Culture Expansion *In Vitro*: A Step Closer to 1-Stage Orthopaedic Procedures. [Am J Sports Med. 50 \(1\): 152-161.](#)
39. Uthanaphun, T. *et al.* (2024) PL-hMSC and CH-hMSC derived soluble factors inhibit proliferation but improve hGBM cell migration by activating TGF- β and inhibiting Wnt signaling. [Biosci Rep.44\(5\):BSR20231964. \[Epub ahead of print\].](#)

40. Park, C.Y. *et al.* (2025) External-Force-Offset Effects of ECM Coating Layers on hMSCs Subjected to External Physical Force. [Biomater Res. 29: 0265.](#)

41. Campbell, T.M. *et al.* (2025) Capsular stem cell function and tissue composition are associated with symptoms and radiographic severity in people with knee osteoarthritis. [Ther Adv Musculoskelet Dis. 17: 1759720X251321941.](#)

Storage This product is shipped at ambient temperature. It is recommended to aliquot and store at -20°C on receipt. When thawed, aliquot the sample as needed. Keep aliquots at 2-8°C for short term use (up to 4 weeks) and store the remaining aliquots at -20°C.

Avoid repeated freezing and thawing as this may denature the antibody. Storage in frost-free freezers is not recommended.

Guarantee 12 months from date of despatch

Health And Safety Information Material Safety Datasheet documentation #10040 available at: <https://www.bio-rad-antibodies.com/SDS/MCA90T>

Regulatory For research purposes only

Related Products

Recommended Secondary Antibodies

Goat Anti Mouse IgG IgA IgM (STAR87...) [HRP](#)

Goat Anti Mouse IgG (STAR70...) [FITC](#)

Goat Anti Mouse IgG (STAR77...) [HRP](#)

Goat Anti Mouse IgG (STAR76...) [RPE](#)

Goat Anti Mouse IgG (H/L) (STAR117...) [Alk. Phos.](#), [DyLight®488](#), [DyLight®550](#), [DyLight®650](#), [DyLight®680](#), [DyLight®800](#), [FITC](#), [HRP](#)

Rabbit Anti Mouse IgG (STAR12...) [RPE](#)

Rabbit Anti Mouse IgG (STAR13...) [HRP](#)

Rabbit Anti Mouse IgG (STAR9...) [FITC](#)

Goat Anti Mouse IgG (Fc) (STAR120...) [FITC](#), [HRP](#)

Recommended Negative Controls

[MOUSE IgG1 NEGATIVE CONTROL \(MCA928\)](#)

Product inquiries: www.bio-rad-antibodies.com/technical-support

To find a batch/lot specific datasheet for this product, please use our online search tool at: bio-rad-antibodies.com/datasheets

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