

Datasheet: MCA90SBUV740

Description:	MOUSE ANTI HUMAN CD90:StarBright UltraViolet 740
Specificity:	CD90
Other names:	THY1
Format:	StarBright UltraViolet 740
Product Type:	Monoclonal Antibody
Clone:	F15-42-1
Isotype:	IgG1
Quantity:	100 TESTS/0.5ml

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)	▪			Neat

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

(1) Staining at lower temperatures generally requires longer incubation to reach antibody binding equilibrium, and this effect is more pronounced for StarBright Dyes due to their larger size. For optimum staining, Bio-Rad recommends incubating samples either overnight at 4°C or 1 hour at room temperature.

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 conjugated to StarBright UltraViolet 740 - liquid		
Max Ex/Em	Fluorophore	Excitation Max (nm)	Emission Max (nm)
	StarBright UltraViolet 740	344	743

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 (NaN ₃) 1% Bovine Serum Albumin 0.1% Pluronic F68 0.1% PEG 3350 0.05% Tween 20
Approx. Protein Concentrations	For information on the concentration of our StarBright Dye conjugated reagents please visit our FAQ page.
Immunogen	Purified human brain Thy-1.
External Database Links	UniProt: P04216 Related reagents Entrez Gene: 7070 THY1 Related reagents
Fusion Partners	Spleen cells from immunized BALB/c mice were fused with cells of the mouse NS-1 myeloma cell line.
Specificity	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. Mouse anti Human CD90 antibody, clone F15-42-1 is routinely tested in flow cytometry on the MOLT4 cell line.
Flow Cytometry	Use 5µl of the suggested working dilution to label 0.5x10 ⁶ cells in 100µl. Best practices suggest a 5 min centrifugation at 6,000g prior to sample application.
References	- 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. - Tome, M. <i>et al.</i> (2007) Calponin is expressed by subpopulations of connective tissue cells but not olfactory ensheathing cells in the neonatal olfactory mucosa. BMC Neurosci. 8: 74. - Diaz-Romero, J. <i>et al.</i> (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.

Storage	This product is shipped at ambient temperature. Store at +4°C. DO NOT FREEZE. This product should be stored undiluted.
Guarantee	12 months from date of despatch
Acknowledgements	This product is covered by U.S. Patent No. 10,150,841 and related U.S. and foreign counterparts
Health And Safety Information	Material Safety Datasheet documentation #20471 available at: https://www.bio-rad-antibodies.com/SDS/MCA90SBUV740
Regulatory	For research purposes only

Related Products

Recommended Useful Reagents

[HUMAN SEROBLOCK \(BUF070A\)](#)

[HUMAN SEROBLOCK \(BUF070B\)](#)

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
'M452908:260710'

Printed on 09 Oct 2026