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Monoclonal Antibody to CD90 - Purified

Alternate names: CDw90, THY1, Thy-1, Thy-1 membrane glycoprotein

Catalog No.: SM049P

Quantity: 0.25 mg

Concentration: 1.0 mg/ml

Background: Thy1.1 is expressed on a variety of cell types including thymocytes, neuronal cells, stem cells, T lymphocytes (mouse), immature B cells (rat) and connective tissues.

Uniprot ID: P01831

NCBI: NP_033408.1

GeneID: 21838

Host / Isotype: Mouse / IgG1

Clone: OX-7

Immunogen: Rat Thy 1 antigen.
Remarks: Spleen cells from immunised BALB/c mice were fused with cells of the NS1 mouse myeloma cell line.

Format: **State:** Liquid purified IgG fraction.
Purification: Affinity Chromatography on Protein G.
Buffer System: PBS, pH7.2 containing 0.09% Sodium Azide as preservative.

Applications: **Western Blot.**
Immunoprecipitation.
Immunohistochemistry on Frozen Sections.
Flow Cytometry: Use 10 µl of 1/50-1/100 dilted antibody to label 10e6 cells in 100 µl. This product is routinely tested in flow cytometry on Rat thymocytes.
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity:

This antibody recognises Rat and Mouse CD90, also known as Thy1.1, expressed on a variety of cell types including thymocytes, neuronal cells, stem cells, T lymphocytes (Mouse), immature B cells (rat) and connective tissues.
Since Thy1.1 is a monomorphic determinant in Rat but polymorphic in Mice, clone MRC OX-7 reacts with Thy1.1 Mice e.g. AKR and FVB Mice, but not Thy1.2 Mice such as CBA and BALB/c.
Clone MRC OX-7 has been demonstrated to promote neurite outgrowths on peripherin-stained sympathetic neurons, using fluorescence microscopy. (5)
This clone has been reported to induce glomerular nephritis in Wistar Rats. (8)
Affinity of the Fab' of MRC OX-7:
Rat Thy1: 3 x 10e9me1
Mouse Thy1.1: 3 x 10e8m-1 (1).
Species: Rat, Mouse, Rabbit, Guinea Pig.
Other species not tested.

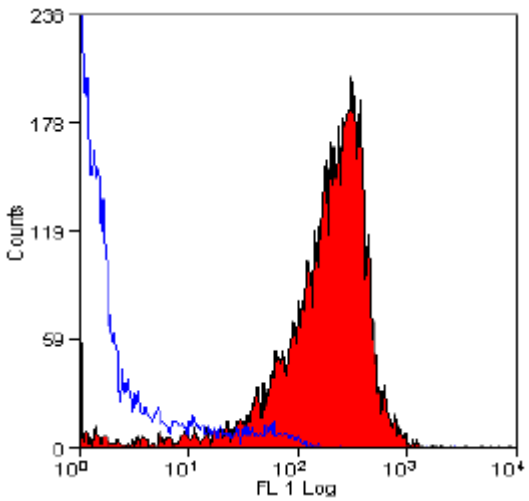
Storage:

Store the antibody undiluted at 2-8°C for one month or (in aliquots) at -20°C for longer.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General References:

1. Mason, D.W. & Williams, A.F. (1980) The Kinetics of antibody binding to membrane antigens in solution and at the cell surface. Biochem.J. 187: 1-20.
2. Campbell, D.G. et al. (1981) Rat brain Thy-1 glycoprotein. The amino acid sequence, disulphide bonds and an unusual hydrophobic region. Biochem. J. 195: 15-30.
3. Bukovský, A. et al. (1983) The localization of Thy-1.1, MRC OX 2 and Ia antigens in the rat ovary and fallopian tube. Immunology. 48:587-595.
4. Lee, W. et al. (1998) Thy-1, a novel marker for angiogenesis upregulated by inflammatory cytokines. Circ. Res. 82: 845-851.
5. Jeng, C .J. et al. (1998) Thy-1 is a component common to multiple populations of synaptic vesicles. J. Cell. Biol. 140(3): 685-98.
6. Banerjee, S.A. et al. (1997) An antibody to the tetraspan membrane protein CD9 promotes neurite formation in a partially alpha3beta1 integrin-dependent manner. J. Neurosci. 17: 2756-2765.
7. Kawachi, H. et al. (1992) Epitope-specific induction of mesangial lesions with proteinuria by a MoAb against mesangial cell surface antigen. Clin. Exp. Immunol. 88: 399-404.
8. Tamura, M. et al. (1996) Enhanced Glomerular Profilin Gene and Protein Expression in Experimental Mesangial Proliferative Glomerulonephritis. Biochem Biophys Res Comm.
9. Stevenson, K.S. et al. (2009) Isolation, characterization, and differentiation of thy1.1-sorted pancreatic adult progenitor cell populations. Stem Cells Dev. 18:1389-98.
10. Biermann, J. et al. (2011) Histone deacetylase inhibitors sodium butyrate and valproic acid delay spontaneous cell death in purified rat retinal ganglion cells. Mol Vis. 17: 395-403.
11. Keller, R.K. et al. (2004) Formation of 7-dehydrocholesterol-containing membrane rafts in vitro and in vivo, with relevance to the Smith-Lemli-Opitz syndrome. J Lipid Res. 45: 347-55.
12. Ohashi, N. et al. (2010) Glomerular angiotensinogen is induced in mesangial cells in diabetic rats via reactive oxygen species--ERK/JNK pathways. Hypertens Res. 33:1174-81.

Pictures:



Staining of Rat thymus with Mouse Anti Rat CD90 antibody (THY 1.1)