Mouse monoclonal antibody to rat p75NTR [MC192]: IgG

Catalogue No.: M-006-100

Description: Monoclonal antibody MC192 against the rat low affinity nerve growth factor receptor (p75NTR) is derived from the fusion of Sp2/0-Ag 14 myeloma cells with mouse immune splenocytes. MC192 monoclonal antibody was originally generated by Chandlers et al. p75NTR was originally discovered as a low affinity nerve growth factor receptor. Later it was found that it was the receptor for all neurotrophins. It mediates signals of neurotrophins for neuronal survival, apoptosis, neurite outgrowth and synaptic plasticity. Recently, it has been revealed that p75NTR is not only acts as the receptor for neurotrophins but also the receptor for many other pathological ligands such as prions, rabies virus and amyloid beta. p75NTR also acts as a co-receptor for NOGO which mediates inhibitory signals of myelin associated protein. p75NTR is highly expressed in a number of non-neuronal and neuronal cells including motor neurons during development and also in damaged neurons. MC192 recognizes the extracellular domain of the neurotrophin receptor p75NTR in rat. MC192 antibody may be used for immunocytochemical localisation of rat cells expressing p75NTR, ELISA and western blot. This antibody has also been used for the construction of the MC192-saporin immunotoxin for specific elimination of neuronal populations in basal forebrain cholinergic neurons to generate an animal model for Alzheimer's disease. Using Flow Cytometry, this antibody has frequently been employed for panning to isolate p75NTR-expressing rat cells. MC192 has a potential use as the ligand for gene delivery into p75NTR-expressing rat cells via a receptor-mediated mechanism. FUNCTION: Low affinity receptor which can bind to NGF, BDNF, NT-3, and NT-4. Can mediate cell survival as well as cell death of neural cells. SUBUNIT: Homodimer; disulfide-linked. Interacts with p75NTR-associated cell death executor. Interacts with NGFRAP1/BEX3. Interacts with TRAF2, TRAF4, TRAF6, PTPN13 and RANBP9. Interacts through TRAF6 with SQSTM1 which bridges NGFR to NTRK1 (By similarity). Interacts with BEX1. SUBCELLULAR LOCATION: Membrane; single-pass type I membrane protein. DOMAIN: Death domain is responsible for interaction with RANBP9. PTM: N- and O-glycosylated. PTM: Phosphorylated on serine residues. SIMILARITY: Contains 1 death domain. SIMILARITY: Contains 4 TNFR-Cys repeats.

Batch No.: See product label

Unit size: 100 µg

Antigen: NGF receptor

Clone: MC192

Other Names: Low-affinity nerve growth factor receptor; NGF receptor; Gp80-LNGFR; p75 ICD; Low affinity neurotrophin receptor p75NTR

Accession: TNR16_RAT

Produced in: Mouse

Purity: Protein G purified immunoglobulin

Applications: IHC, ELISA, WB (non-reducing conditions only!; do not use reducing agents such as DTT or beta-mercaptoethanol), Motor neuron isolation, Gene/Toxin Delivery to rat sensory/motor

39 Winwood Street • Thebarton • South Australia 5031
Telephone + 61 8 83527711 • Email sales@biosensis.com • www.biosensis.com

Mouse monoclonal antibody to rat p75NTR [MC192]: IgG

neurons. A working solution of 1-2 µg/ml was determined by immunohistochemical staining on paraformaldehyde fixed, alcohol fixed and paraffin-embedded sections of rat spinal cord and brain. For WB, 1-5 ug/mL was found to be suitable. MC192 is not suitable as a blocking agent, although it has been incorrectly used for this purpose in many published works. The antibody was generated specifically by screening for monoclonals that had the ability to ENHANCE the binding of NGF, the natural ligand for p75. Therefore, this antibody is particularly unusual. The full details can be found in the original paper, which is listed on our datasheet (see Chandler et al, 1984). Biosensis recommends optimal dilutions/concentrations should be determined by the end user.

Specificity: Specificity has been confirmed by immunohistochemical staining of lesioned sciatic nerve and spinal cord, the results reflect the reported literatures.

Cross-reactivity: This monoclonal antibody has been tested for immunohistochemical localisation of p75NTR-expressing rat cells in the spinal cord and brain. This monoclonal antibody does not cross react with p75NTR-expressing cells in other species.

Form: Lyophilised

Reconstitution: Reconstitute in 100 µl of sterile water. Centrifuge to remove any insoluble material.

Storage: The MC192 is supplied in lyophilised form from Protein G-purified hybridoma cell culture supernatants. The lyophilised antibody is stable when stored at -20°C. For an additional stability Glycerol (1:1) may be added. After reconstitution aliquots should be kept at -20°C for a higher stability. Repetitive freeze/thaw cycle should be avoided.

Specific References:

Riffault B, Medina I, Dumon C, Thalman C, Ferrand N, Friedel P, Gaiarsa JL, Porcher C. " Pro-Brain-Derived Neurotrophic Factor Inhibits GABAergic Neurotransmission by Activating Endocytosis and Repression of GABAA Receptors." J. Neurosci. 34(40):13516-34 Application: Western Blot,Neuronal cells and hippocampi; Species: Rat

Davies A. et al (2010) The alpha2delta subunits of voltage-gated calcium channels form GPI-anchored proteins, a post translational modification essential for function Proc Natl Acad Sci U S A. Jan 26;107(4):1654-9

Wilson-Gerwing T.D. et al (2009) J Comp Neurol. 2009 Sep 1;516(1):49-58

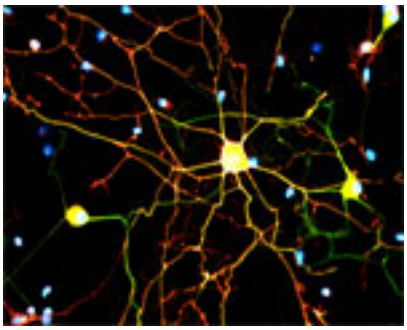
General References:

1. Vilar M. et al (2009) Activation of the p75 neurotrophin receptor through conformational rearrangement of disulphide-linked receptor dimers Neuron. 2009 Apr 16;62(1):72-83
2. Chandler, C. E. et al (1984) J Biol Chem 259, 6882-6889
3. Yan, Q., and Johnson, E. M., Jr. J Neurosci. 1988 Sep;8(9):3481-98.
4. Huber, J., Dittrich, F., and Phelan, P. (1993) Eur J Biochem 218, 1031-1039
5. Zhou, X. F., and Rush, R. A. (1996) J Comp Neurol 372, 37-48

39 Winwood Street • Thebarton • South Australia 5031
Telephone + 61 8 83527711 • Email sales@biosensis.com • www.biosensis.com

Mouse monoclonal antibody to rat p75NTR [MC192]: IgG

6. Johnson, D. et al. (1986) Cell 47, 545-54
7. Tuffereau, C. et al (1998) Embo J 17, 7250-9
8. Kruger, G. M. et al. (2002) Neuron 35, 657-69
9. Stemple, D. L. & Anderson, D. J. (1992) Cell 71, 973-85
10. Urschel, B. A. & Hulsebosch, C. E. (1992) Brain Res Dev Brain Res 69, 261-70
11. Lagares, A. et al. (2007) J. Neurosci 27, 7939-53
12. Luther, J.A. and Birren, S.J. (2009) J. Neurosci 29, 5411-24
13. Rabizadeh S. et al (1993) Science. Jul 16;261(5119):345-8.
14. Birren SJ et al (1992) Science. Jul 17;257(5068):395-7.



Immunofluorescent detection of p75NTR [MC192] in cultured rat dorsal root ganglion (DRG) using Mouse monoclonal antibody to rat p75NTR [MC192], catalogue number M-006-50. Merged pictures of cultured rat DRG triple-stained for p75 NTR (red colour), beta-Tubulin (green colour) and nuclei using DAPI (violet colour).

39 Winwood Street • Thebarton • South Australia 5031
Telephone + 61 8 83527711 • Email sales@biosensis.com • www.biosensis.com