

Mouse monoclonal antibody to rat p75NTR [MC192]: IgG1

Catalogue No.:	M-006-100
Description:	<p>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 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.</p>
Batch No.:	See product label
Unit size:	100 ug
Antigen:	N-octyl glucoside solubilized proteins from isolated PC12 cell plasma membranes were used as the immunogen (see Chandler et al. 1984).
Antigen Location:	ECD of rat NGFR
Isotype:	IgG1
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

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Purity:	Protein G purified immunoglobulin
Applications:	IH (likely fixed), ELISA, WB, Flow Cytometry (2 ug per 10 ⁶ cells) IP (non-reducing conditions only!; do not use reducing agents such as DTT or beta-mercaptoethanol), Traditional formalin fixed paraffin embedded immunohistochemistry is NOT recommended with MC192. Motor neuron isolation, Gene/Toxin Delivery to rat sensory/motor neurons. A working solution of 1-2 ug/mL was determined by immunohistochemical staining on 4% paraformaldehyde fixed, or alcohol fixed rat spinal cord and brain. For non-denatured WB, 1-5 ug/mL was found to be suitable with suitable controls (PC12 lysate). ELISA: detection only, 1-5ug/mL has been suggested in literature. Immunoprecipitation: 5 ug/mL, > 0.5% triton X-100 buffer/500ug/lysate; PC12 positive control strong suggested. 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:	MC192 is specific only for RAT NGFR, no reactivity to Human or Mouse NGFR has been reported
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 uL 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 2-8C or -20C. After reconstitution undiluted aliquots should be kept at -20C for up to six months. For additional stability Glycerol (1:1) may be added after reconstitution. Repetitive freeze/thaw cycle should be avoided.
Specific References:	<p>Riffault B, Kourdougli N, Dumon C, Ferrand N, Buhler E, Schaller F, Chambon C, Rivera C, Gaiarsa JL, Porcher C (2016) Pro-Brain-Derived Neurotrophic Factor (proBDNF)-Mediated p75NTR Activation Promotes Depolarizing Actions of GABA and Increases Susceptibility to Epileptic Seizures. Cereb. Cortex [Epub ahead of print]. Application: Western Blot; Species: Rat</p> <p>Brandli A, Johnstone DM, Stone J (2016) Remote Ischemic Preconditioning Protects Retinal Photoreceptors: Evidence From a Rat Model of Light-Induced Photoreceptor Degeneration. Invest Ophthalmol Vis Sci. 57(13):5302-13 Application: Western Blot, IHC; Species: Rat</p> <p>Riffault B, Medina I, Dumon C, Thalman C, Ferrand N, Friedel P, Gaiarsa JL, Porcher C. (2014) "Pro-Brain-Derived Neurotrophic Factor Inhibits GABAergic Neurotransmission by Activating</p>

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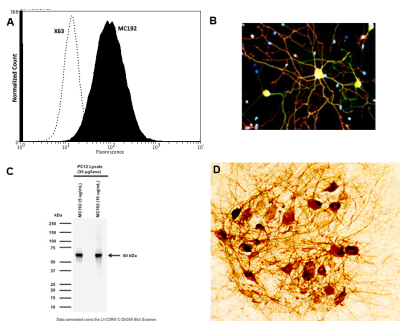
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A: Specific staining of rat p75NTR expressed in rat C6 glioma cell line by Flow Cytometry using cat # M-006-100. Blocking: 200 µg/mL normal sheep IgG, Primary antibody: MC192 (2 µg per $\sim 10^6$ cells), 30 minutes in ice, Secondary antibody: Goat anti-mouse PE (1:100), 20 minutes in dark at room temperature. Negative control: Non-specific Control IgG, clone X63 (cat # M-1249-200, black dashed). Data and results were generated using Orflo Moxiflow™ instrument and protocols. B: Immunofluorescent detection of p75NTR in cultured rat dorsal root ganglion (DRG) using Mouse monoclonal antibody to rat p75NTR [MC192]. Merged pictures of cultured rat DRG triple-stained for p75 NTR (red colour), beta-Tubulin (green colour) and nuclei using DAPI (violet colour). C: Western blot analysis of p75NTR expression in PC12 cells (RIPA lysate); SDS-PAGE: Denaturing (10 min @ 70°C), non-reducing; Electrophoresis: 4-20% Bis-Tris; Transfer: Tris-Glycine buffer, nitrocellulose membrane (0.45 µm); Blocking: 5% skim milk in TBST, 1 hour at RT; Primary antibody: 5 and 10 µg/mL MC192 in blocking buffer, overnight incubation; Secondary antibody: Anti-mouse-HRP (1:6000); Detection: Chemiluminiscence; Predicted MW of rat p75 based on amino acid sequence: 43 kDa; Observed MW due to post-translational modifications: 60 kDa. D: Immunohistochemical staining of p75NTR in rat motor neurons on lesioned sciatic nerve.

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