Revision 9

#8238 Store at -20C

p75NTR (D4B3) XP® Rabbit mAb

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355) orders@cellsignal.com

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Web: info@cellsignal.com cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP, IF-F, IF-IC, FC-L	H M R	Endogenous	75	Rabbit IgG	#P08138	4804

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunofluorescence (Frozen)	1:1600 - 1:3200
Immunofluorescence (Immunocytochemistry)	1:1600 - 1:3200
Flow Cytometry (Live)	1:200 - 1:800

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

For a carrier free (BSA and azide free) version of this product see product #46333.

Specificity / Sensitivity

p75NTR (D4B3) XP® Rabbit mAb recognizes endogenous levels of total p75NTR protein. Nonspecific cytoplasmic staining is observed in fixed frozen mouse spleen and colon by immunofluorescence.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Arg198 of human p75NTR protein. This antibody is predicted to bind the extracellular amino-terminal region of p75NTR protein.

Background

The p75 neurotrophin receptor (p75NTR), a member of the TNF receptor superfamily, is distinguished by multiple cysteine-rich ligand-binding domains, a single transmembrane sequence, and a noncatalytic cytoplasmic domain (1). p75NTR displays paradoxical functions when acting alone or with other receptor proteins. Working in concert with Trk receptors, p75NTR recognizes neurotrophins and transmits trophic signals into the cell. Both p75NTR and TrkA are required to activate PI3K-Akt signaling, while TrkA can individually activate the MAP kinase pathway. In contrast, p75NTR, possibly through JNK, ensures appropriate apoptosis of injured neurons and improperly targeted neonatal neurons (2).

The p75NTR protein undergoes sequential cleavage similar to APP and Notch. First, α-secretase removes the p75NTR ectodomain, eliminating ligand-mediated signaling. At this point, the membrane-tethered cleavage product can still fine-tune Trk-mediated trophic actions. γ-secretase cleaves within the transmembrane domain to liberate the cytoplasmic tail from its membrane anchor and allow the p75NTR intracellular domain to translocate to the nucleus (3,4).

Background References

1. Chao, M.V. (2003) *Nat. Rev. Neurosci.* 4, 299-309.
2. Nykjaer, A. et al. (2005) *Curr. Opin. Neurobiol.* 15, 49-57.
3. Kanning, K.C. et al. (2003) *J. Neurosci.* 23, 5425-5436.
4. Jung, K.M. et al. (2003) *J. Biol. Chem.* 278, 42161-42169.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting **IP:** Immunoprecipitation **IF-F:** Immunofluorescence (Frozen)
IF-IC: Immunofluorescence (Immunocytochemistry) **FC-L:** Flow Cytometry (Live)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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Limited Uses