#4621 Store at –20°C

Phospho-TrkA (Tyr674/675)/TrkB (Tyr706/707) (C50F3) Rabbit mAb

☑ 100 µl
(10 western blots)

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Entrez-Gene ID #4914
Swiss-Prot Acc. #P04629

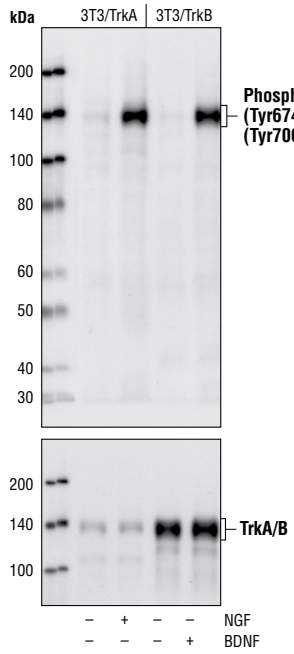
Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP Endogenous	H, R, (M)	140 kDa	Rabbit IgG**

Background: The family of Trk receptor tyrosine kinases consists of TrkA, TrkB and TrkC. While the sequence of these family members is highly conserved, these family members are activated by different neurotrophins: TrkA by NGF, TrkB by BDNF or NT4 and TrkC by NT3. TrkA regulates proliferation and is important for development and maturation of the nervous system (1). Phosphorylation at Tyr490 is required for Shc association and activation of the Ras-MAP kinase cascade. Residues Tyr674/675 lie within the catalytic domain, and phosphorylation at this site reflects TrkA kinase activity (2–6). Point mutations, deletions and chromosomal rearrangements (chimera) cause ligand-independent receptor dimerization and activation of TrkA. Many malignancies (breast, colon, prostate and thyroid carcinomas and acute myeloid leukemia) have activated TrkA. Expression of TrkA in neuroblastomas is a good prognostic marker because it signals growth arrest and differentiation of cells originating from the neural crest (1).

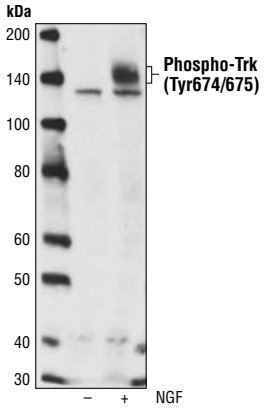
The phosphorylation sites are conserved between TrkA and TrkB: Tyr490 of TrkA corresponds to Tyr512 in TrkB, and Tyr674/675 of TrkA to Tyr706/707 in TrkB of the human sequence (7). TrkB is overexpressed in tumors such as neuroblastoma, prostate adenocarcinoma and pancreatic ductal adenocarcinoma. In neuroblastomas overexpression of TrkB correlates with unfavorable disease outcome when autocrine loops signaling tumor survival are potentiated by additional overexpression of brain-derived neurotrophic factor (BDNF). An alternatively spliced truncated TrkB isoform lacking the kinase domain is overexpressed in Wilms's tumors and this isoform may act as a dominant-negative to TrkB signaling (8).

Specificity/Sensitivity: Phospho-TrkA (Tyr674/675)/TrkB (Tyr706/707) (C50F3) Rabbit mAb detects endogenous levels of TrkA and TrkB only when phosphorylated at Tyr674/675 of TrkA and Tyr706/707 of TrkB. The antibody may cross-react with a protein of ~150 kDa phosphorylated at an unknown tyrosine residue.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr674/674 of human TrkA.



Western blot analysis of extracts from NIH/3T3 cells stably transfected with TrkA or TrkB, and treated with NGF or BDNF, respectively, using Phospho-TrkA (Tyr674/675)/TrkB (Tyr706/707) (C50F3) Rabbit mAb (upper) and pooled TrkA/TrkB Antibodies (lower).



Western blot analysis of extracts from untreated or NGF-treated PC12 cells using Phospho-TrkA (Tyr674/675)/TrkB (Tyr706/707) (C50F3) Rabbit mAb.

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

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:50

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

(1) Pierotti, M.A. and Greco, A. (2006) *Cancer Lett.* 232, 90–98.

(2) Segal, R.A. and Greenberg, M.E. (1996) *Annu. Rev. Neurosci.* 19, 463–489.

(3) Stephens, R.M. et al. (1994) *Neuron* 12, 691–705.

(4) Obermeier, A. et al. (1993) *EMBO J.* 12, 933–941.

(5) Obermeier, A. et al. (1994) *EMBO J.* 13, 1585–1590.

(6) Yao, R. and Cooper, G.M. (1995) *Science* 267, 2003–2006..

(7) Huang, E.J. and Reichardt, L.F. (2003) *Annu. Rev. Biochem.* 72, 609–642.

(8) Desmet, C.J. and Peeper, D.S. (2006) *Cell Mol. Life Sci.* 63, 755–759.

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

Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide

Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **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 **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.