Revision 3

Store at -20C

#14960

EphB4 (D1C7N) Rabbit mAb

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IHC-P, IF-IC	H	Endogenous	135	Rabbit IgG	#P54760	2050

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunohistochemistry (Paraffin)	1:500
Immunofluorescence (Immunocytochemistry)	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 #78650.

Specificity/Sensitivity

EphB4 (D1C7N) Rabbit mAb recognizes endogenous levels of total EphB4 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with recombinant protein specific to the amino terminus of human EphB4 protein.

Background

The Eph receptors are the largest known family of receptor tyrosine kinases (RTKs). They can be divided into two groups based on sequence similarity and on their preference for a subset of ligands: EphA receptors bind to a glycosylphosphatidylinositol-anchored ephrin A ligand; EphB receptors bind to ephrin B proteins that have a transmembrane and cytoplasmic domain (1,2). Research studies have shown that Eph receptors and ligands may be involved in many diseases including cancer (3). Both ephrin A and B ligands have dual functions. As RTK ligands, ephrins stimulate the kinase activity of Eph receptors and activate signaling pathways in receptor-expressing cells. The ephrin extracellular domain is sufficient for this function as long as it is clustered (4). The second function of ephrins has been described as "reverse signaling", whereby the cytoplasmic domain becomes tyrosine phosphorylated, allowing interactions with other proteins that may activate signaling pathways in the ligand-expressing cells (5). Various stimuli can induce tyrosine phosphorylation of ephrin B, including binding to EphB receptors, activation of Src kinase, and stimulation by PDGF and FGF (6). Tyr324 and Tyr327 have been identified as major phosphorylation sites of ephrin B1 *in vivo* (7).

The ephrin receptor B4 (EphB4) is normally expressed on venous endothelial cells, while arterial endothelial cells express its ligand, EphrinB2. Together, EphB4 and EphrinB2 play an important roll in vasculature development and maintenance (8). Research studies show that various cancers, including breast, colorectal, esophageal, and pancreatic cancers, express EphB4 (9-12). However, as EphB4 has been shown to have both tumor suppressive and promoting properties, its role in tumorigenesis and tumor progression remains uncertain (13).

Background References

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3. Dodelet, V.C. and Pasquale, E.B. (2000) *Oncogene* 19, 5614-9.
4. Holder, N. and Klein, R. (1999) *Development* 126, 2033-44.
5. Brückner, K. et al. (1997) *Science* 275, 1640-3.
6. Palmer, A. et al. (2002) *Mol Cell* 9, 725-37.
7. Kalo, M.S. et al. (2001) *J Biol Chem* 276, 38940-8.
8. Wang, H.U. et al. (1998) *Cell* 93, 741-53.
9. Kumar, S.R. et al. (2006) *Am J Pathol* 169, 279-93.
10. Davalos, V. et al. (2006) *Cancer Res* 66, 8943-8.
11. Hasina, R. et al. (2013) *Cancer Res* 73, 184-94.
12. Li, M. and Zhao, Z. (2013) *Mol Biol Rep* 40, 1735-41.
13. Noren, N.K. and Pasquale, E.B. (2007) *Cancer Res* 67, 3994-7.

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

W: Western Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin) **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human

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Limited Uses