Revision 1

#64801 Store at -20C

EphA7 (D1C3K) 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:
WB, IP	H	Endogenous	130	Rabbit IgG	#Q15375	2045

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100

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.

Specificity / Sensitivity

EphA7 (D1C3K) Rabbit mAb recognizes endogenous levels of total EphA7 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Leu914 of human EphA7 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. While 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).

The EphA7 receptor preferentially binds ephrin-A5 as a ligand. This ligand-receptor interaction stimulates EphA7 signaling and induces apoptotic cell death through TNFR1 and caspase-8 pathway (6,7). EphA7 plays a critical role in organ development during neural tube closure, cortical dendritic development and spine maturation as well as urine tract insertion (8-10). Secreted EphA7 has been shown to promote somatic cell reprogramming through ERK activity reduction (11). Silencing of the secreted form of EphA7 is associated with germinal center B cell lymhomas. The secreted form of EphA7 has been proposed as a soluble tumor suppresor in lymphoma (12-14).

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. Lee, H. et al. (2013) *Mol Cells* 35, 450-5.
7. Lee, H. et al. (2015) *Mol Cells* 38, 349-55.
8. Lee, J. et al. (2013) *Dev Growth Differ* 55, 341-9.
9. Clifford, M.A. et al. (2014) *Proc Natl Acad Sci U S A* 111, 4994-9.
10. Weiss, A.C. et al. (2014) *Development* 141, 3420-30.
11. Lee, J. et al. (2015) *Stem Cell Reports* 5, 480-9.
12. Oricchio, E. and Wendel, H.G. (2012) *Cell Cycle* 11, 1076-80.
13. Dawson, D.W. et al. (2007) *Oncogene* 26, 4243-52.
14. Oricchio, E. et al. (2011) *Cell* 147, 554-64.

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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting **IP:** Immunoprecipitation

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