

**EphA1 (D6V7I) Rabbit mAb**

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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	H M	Endogenous	130	Rabbit IgG	#P21709	2041

**Product Usage Information****Application**

Western Blotting

**Dilution**

1:1000

**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**

EphA1 (D6V7I) Rabbit mAb recognizes endogenous levels of total EphA1 protein.

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a recombinant protein fragment specific to the extracellular domain of human EphA1 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 EphA1 receptor preferentially binds ephrin-A1 as a ligand (6). This ligand-receptor interaction stimulates EphA1 signaling and regulates cell morphology and motility through the ILK-RhoA-ROCK pathway (7). The *EphA1* gene has been associated with late-onset Alzheimer's diseases (8,9). The role of EphA1 in cancer development falls into two opposite categories. In some type of cancer such as prostate, gastric and liver cancer, high expression of EphA1 associates with cancer metastasis and invasion (10-12). For other types of cancers, such as colon cancer and nonmelanoma skin cancer, downregulation of the protein correlates with cancer development (11,12). The bidirectional signaling modulation of Ephrin-Ephrin receptor interaction might contribute this paradox phenomena (13).

**Background References**

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2. Klein, R. (2001) *Curr Opin Cell Biol* 13, 196-203.
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. Coulthard, M.G. et al. (2001) *Growth Factors* 18, 303-17.
7. Yamazaki, T. et al. (2009) *J Cell Sci* 122, 243-55.
8. Naj, A.C. et al. (2011) *Nat Genet* 43, 436-41.
9. Hollingworth, P. et al. (2011) *Nat Genet* 43, 429-35.
10. Wang, Y. et al. (2016) *J Exp Clin Cancer Res* 35, 65.
11. Herath, N.I. et al. (2009) *Br J Cancer* 100, 1095-102.
12. Hafner, C. et al. (2006) *Mod Pathol* 19, 1369-77.
13. Pasquale, E.B. (2008) *Cell* 133, 38-52.

**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

**Cross-Reactivity Key**

**H:** Human **M:** Mouse

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