

EphB2 Rabbit pAb

Catalog # AP100144

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	P29323
Other Accession	P29323
Reactivity	Rat, Human, Mouse
Predicted	Chicken, Dog
Host	Rabbit
Clonality	Polyclonal
Calculated MW	117493
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human EphB2
Epitope Specificity	101-200/1055
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the protein kinase superfamily. Tyr protein kinase family. Ephrin receptor subfamily. Contains 1 Eph LBD (Eph ligand-binding) domain. Contains 2 fibronectin type-III domains. Contains 1 protein kinase domain. Contains 1 SAM (sterile alpha motif) domain.
SUBUNIT	Heterotetramer upon binding of the ligand. The heterotetramer is composed of an ephrin dimer and a receptor dimer. Oligomerization is probably required to induce biological responses. Interacts (via PDZ-binding motif) with GRIP1 and PICK1 (via PDZ domain). Interacts with ARHGEF15; mediates ARHGEF15 phosphorylation, ubiquitination and degradation by the proteasome. Interacts with AQP1; involved in endolymph production in the inner ear.
DISEASE	Defects in EPHB2 may be a cause of susceptibility to prostate cancer (PC) [MIM:176807]. It is a malignancy originating in tissues of the prostate. Most prostate cancers are adenocarcinomas that develop in the acini of the prostatic ducts. Other rare histopathologic types of prostate cancer that occur in approximately 5% of patients include small cell carcinoma, mucinous carcinoma, prostatic ductal carcinoma, transitional cell carcinoma, squamous cell carcinoma, basal cell carcinoma, adenoid cystic carcinoma (basaloid), signet-ring cell carcinoma and neuroendocrine carcinoma. Note=EPHB2 mutations have been found in a prostate cancer cell line derived from a brain metastasis.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	This gene encodes a member of the Eph receptor family of receptor tyrosine kinase transmembrane glycoproteins. These receptors are composed of an N-terminal glycosylated ligand-binding domain, a transmembrane region and an intracellular kinase domain. They bind ligands called ephrins and are involved in diverse cellular processes including motility, division, and differentiation. A distinguishing characteristic of Eph-ephrin signaling is that both receptors and ligands are competent to transduce a signaling cascade, resulting in bidirectional signaling. This protein belongs to a subgroup of the

Eph receptors called EphB. Proteins of this subgroup are distinguished from other members of the family by sequence homology and preferential binding affinity for membrane-bound ephrin-B ligands. Allelic variants are associated with prostate and brain cancer susceptibility. Alternative splicing results in multiple transcript variants. [provided by RefSeq, May 2015]

Additional Information

Gene ID	2048
Other Names	BDPLT22; CAPB; DRT; EK5; EPHT3; ERK; Hek5; PCBC; Tyro5; Cek5; ETECK; Nuk; Prkm5; Qek5; Sek3; EPHB2_HUMAN; EPHB2; Developmentally-regulated Eph-related tyrosine kinase; ELK-related tyrosine kinase; EPH tyrosine kinase 3; EPH-like kinase 5 (EK5 hEK5); Renal carcinoma antigen NY-REN-47; Tyrosine-protein kinase TYRO5; Tyrosine-protein kinase receptor EPH-3; 2.7.10.1; EPTH3; EPHB2_MOUSE; Neural kinase; Nuk receptor tyrosine kinase; Tyrosine-protein kinase receptor SEK-3; EPH receptor B2
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	EPHB2
Synonyms	DRT, EPHT3, EPTH3, ERK, HEK5, TYRO5
Function	Receptor tyrosine kinase which binds promiscuously transmembrane ephrin-B family ligands residing on adjacent cells, leading to contact-dependent bidirectional signaling into neighboring cells. The signaling pathway downstream of the receptor is referred to as forward signaling while the signaling pathway downstream of the ephrin ligand is referred to as reverse signaling. Functions in axon guidance during development. Involved in the guidance of commissural axons, that form a major interhemispheric connection between the 2 temporal lobes of the cerebral cortex. Also involved in guidance of contralateral inner ear efferent growth cones at the midline and of retinal ganglion cell axons to the optic disk. In addition to axon guidance, also regulates dendritic spines development and maturation and stimulates the formation of excitatory synapses. Upon activation by EFNB1, abolishes the ARHGEF15-mediated negative regulation on excitatory synapse formation. Controls other aspects of development including angiogenesis, palate development and in inner ear development through regulation of endolymph production. Forward and reverse signaling through the EFNB2/EPHB2 complex regulate movement and adhesion of cells that tubularize the urethra and septate the cloaca. May function as a tumor suppressor. May be involved in the regulation of platelet activation and blood coagulation (PubMed: 30213874).
Cellular Location	Cell membrane; Single-pass type I membrane protein. Cell projection, axon. Cell projection, dendrite
Tissue Location	Brain, heart, lung, kidney, placenta, pancreas, liver and skeletal muscle. Preferentially expressed in fetal brain

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