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# EphA4 R Rabbit pAb

Catalog # AP99511

## Product Information

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| **Application** | IHC-P, IHC-F, IF |
| **Primary Accession** | P54764 |
| **Other Accession** | P54764 |
| **Reactivity** | Rat, Human |
| **Predicted** | Mouse |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Calculated MW** | 109860 |
| **Physical State** | Liquid |
| **Immunogen** | KLH conjugated synthetic peptide derived from human EphA4 R |
| **Epitope Specificity** | 551-680/986 |
| **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 (phosphorylated at position Tyr-602) with FYN. Interacts with CDK5, CDK5R1 and NGEF; upon activation by EFNA1 induces NGEF phosphorylation by the kinase CDK5. Interacts with CHN1; effector of EPHA4 in axon guidance linking EPHA4 activation to RAC1 regulation (By similarity). Interacts (via PDZ motif) with SIPA1L1 (via PDZ domain); controls neuronal morphology through regulation of the RAP1 (RAP1A or RAP1B) and RAP2 (RAP2A, RAP2B or RAP2C) GTPases. |
| **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 belongs to the ephrin receptor subfamily of the protein-tyrosine kinase family. EPH and EPH-related receptors have been implicated in mediating developmental events, particularly in the nervous system. Receptors in the EPH subfamily typically have a single kinase domain and an extracellular region containing a Cys-rich domain and 2 fibronectin type III repeats. The ephrin receptors are divided into 2 groups based on the similarity of their extracellular domain sequences and their affinities for binding ephrin-A and ephrin-B ligands. |

## Additional Information

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| **Gene ID** | 2043 |
| **Other Names** | EK8; HEK8; SEK; TYRO1; 2900005C20Rik; Cek8; Sek1; rb; RGD1560587; |

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| | EPHA4_HUMAN; EPHA4; EPH-like kinase 8 (EK8 \| hEK8); Tyrosine-protein kinase TYRO1; Tyrosine-protein kinase receptor SEK; 2.7.10.1; EPHA4_MOUSE; Tyrosine-protein kinase receptor MPK-3; Tyrosine-protein kinase receptor SEK-1; EPH receptor A4 |
| **Dilution** | 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

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| **Name** | EPHA4 |
| **Synonyms** | HEK8, SEK, TYRO1 |
| **Function** | Receptor tyrosine kinase which binds membrane-bound ephrin 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. Highly promiscuous, it has the unique property among Eph receptors to bind and to be physiologically activated by both GPI- anchored ephrin-A and transmembrane ephrin-B ligands including EFNA1 and EFNB3. Upon activation by ephrin ligands, modulates cell morphology and integrin-dependent cell adhesion through regulation of the Rac, Rap and Rho GTPases activity. Plays an important role in the development of the nervous system controlling different steps of axonal guidance including the establishment of the corticospinal projections. May also control the segregation of motor and sensory axons during neuromuscular circuit development. In addition to its role in axonal guidance plays a role in synaptic plasticity. Activated by EFNA1 phosphorylates CDK5 at 'Tyr-15' which in turn phosphorylates NGEF regulating RHOA and dendritic spine morphogenesis. In the nervous system, also plays a role in repair after injury preventing axonal regeneration and in angiogenesis playing a role in central nervous system vascular formation. Additionally, its promiscuity makes it available to participate in a variety of cell-cell signaling regulating for instance the development of the thymic epithelium. During development of the cochlear organ of Corti, regulates pillar cell separation by forming a ternary complex with ADAM10 and CADH1 which facilitates the cleavage of CADH1 by ADAM10 and disruption of adherens junctions (By similarity). Phosphorylates CAPRIN1, promoting CAPRIN1-dependent formation of a membraneless compartment (By similarity). |
| **Cellular Location** | Cell membrane {ECO:0000250\|UniProtKB:Q03137}; Single-pass type I membrane protein {ECO:0000250\|UniProtKB:Q03137} Cell projection, axon {ECO:0000250\|UniProtKB:Q03137}. Cell projection, dendrite {ECO:0000250\|UniProtKB:Q03137}. Postsynaptic density membrane {ECO:0000250\|UniProtKB:Q03137}. Early endosome {ECO:0000250\|UniProtKB:Q03137}. Cell junction, adherens junction {ECO:0000250\|UniProtKB:Q03137}. Note=Clustered upon activation and targeted to early endosome. {ECO:0000250\|UniProtKB:Q03137} |
| **Tissue Location** | Ubiquitous.. |

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