10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Phospho-ACK1(Y826) Antibody

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP3702a

Product Information

Application	DB, E
Primary Accession	Q07912
Other Accession	Q5U2X5, O54967, Q17R13
Reactivity	Human, Rat, Mouse
Predicted	Bovine, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB15411
Calculated MW	114569

Additional Information

Gene ID	10188
Other Names	Activated CDC42 kinase 1, ACK-1, Tyrosine kinase non-receptor protein 2, TNK2, ACK1
Target/Specificity	This ACK1 Antibody is generated from rabbits immunized with a KLH conjugated synthetic phosphopeptide corresponding to amino acid residues surrounding Y826 of human ACK1.
Dilution	DB~~1:500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Phospho-ACK1(Y826) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TNK2
Synonyms	ACK1
Function	Non-receptor tyrosine-protein and serine/threonine-protein kinase that is

	implicated in cell spreading and migration, cell survival, cell growth and proliferation. Transduces extracellular signals to cytosolic and nuclear effectors. Phosphorylates AKT1, AR, MCF2, WASL and WWOX. Implicated in trafficking and clathrin-mediated endocytosis through binding to epidermal growth factor receptor (EGFR) and clathrin. Binds to both poly- and mono-ubiquitin and regulates ligand-induced degradation of EGFR, thereby contributing to the accumulation of EGFR at the limiting membrane of early endosomes. Downstream effector of CDC42 which mediates CDC42-dependent cell migration via phosphorylation of BCAR1. May be involved both in adult synaptic function and plasticity and in brain development. Activates AKT1 by phosphorylating it on 'Tyr-176'. Phosphorylates AR on 'Tyr-267' and 'Tyr-363' thereby promoting its recruitment to androgen-responsive enhancers (AREs). Phosphorylates WWOX on 'Tyr-287'. Phosphorylates MCF2, thereby enhancing its activity as a guanine nucleotide exchange factor (GEF) toward Rho family proteins. Contributes to the control of AXL receptor levels. Confers metastatic properties on cancer cells and promotes tumor growth by negatively regulating tumor suppressor such as WWOX and positively regulating pro-survival factors such as AKT1 and AR. Phosphorylates WASP (PubMed:20110370).
Cellular Location	Cell membrane. Nucleus. Endosome {ECO:0000250|UniProtKB:O54967} Cell junction, adherens junction. Cytoplasmic vesicle membrane; Peripheral membrane protein; Cytoplasmic side. Cytoplasmic vesicle, clathrin-coated vesicle Membrane, clathrin-coated pit. Cytoplasm, perinuclear region. Cytoplasm, cytosol {ECO:0000250|UniProtKB:O54967}. Note=The Tyr-284 phosphorylated form is found both in the membrane and nucleus (By similarity). Co-localizes with EGFR on endosomes (PubMed:20333297). Nuclear translocation is CDC42-dependent (By similarity). Detected in long filamentous cytosolic structures where it co-localizes with CTPS1 (By similarity) {ECO:0000250|UniProtKB:O54967, ECO:0000269|PubMed:20333297}
Tissue Location	The Tyr-284 phosphorylated form shows a significant increase in expression in breast cancers during the progressive stages i.e. normal to hyperplasia (ADH), ductal carcinoma in situ (DCIS), invasive ductal carcinoma (IDC) and lymph node metastatic (LNMM) stages. It also shows a significant increase in expression in prostate cancers during the progressive stages.

Background

ACK1 is a tyrosine kinase that binds Cdc42Hs in its GTP-bound form and inhibits both the intrinsic and GTPase-activating protein (GAP)-stimulated GTPase activity of Cdc42Hs. This binding is mediated by a unique sequence of 47 amino acids C-terminal to an SH3 domain. The protein may be involved in a regulatory mechanism that sustains the GTP-bound active form of Cdc42Hs and which is directly linked to a tyrosine phosphorylation signal transduction pathway.

References

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Rikova K, et al. (2007) Cell 131, 1190-203
Huang PH, et al. (2007) Proc Natl Acad Sci U S A 104, 12867-72
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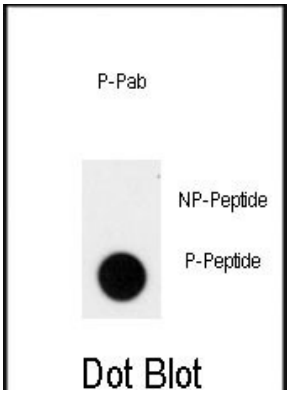
Goss VL, et al. (2006) Blood 107, 4888-97
Wolf-Yadlin A, et al. (2006) Mol Syst Biol 2, 54
Rush J, et al. (2005) Nat Biotechnol 23, 94-101

Images



Dot blot analysis of anti-Phospho-ACK1-pY826 Phospho-specific Pab (Cat. #AP3702a) on nitrocellulose membrane. 50ng of Phospho-peptide or Non Phospho-peptide per dot were adsorbed. Antibody working concentrations are 0.5ug per ml.