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FAK1 Antibody (Y576)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7702d

Product Information

Application	FC, WB, E
Primary Accession	Q05397
Other Accession	Q91738, O35346, P34152, Q00944
Reactivity	Human
Predicted	Chicken, Mouse, Rat, Xenopus
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB15627
Calculated MW	119233
Antigen Region	557-587

Additional Information

Gene ID	5747
Other Names	Focal adhesion kinase 1, FADK 1, Focal adhesion kinase-related nonkinase, FRNK, Protein phosphatase 1 regulatory subunit 71, PPP1R71, Protein-tyrosine kinase 2, p125FAK, pp125FAK, PTK2, FAK, FAK1
Target/Specificity	This FAK1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 557-587 amino acids from human FAK1.
Dilution	FC~~1:10~50 WB~~1:1000 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	FAK1 Antibody (Y576) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PTK2 (HGNC:9611)
Synonyms	FAK, FAK1

Function	Non-receptor protein-tyrosine kinase that plays an essential role in regulating cell migration, adhesion, spreading, reorganization of the actin cytoskeleton, formation and disassembly of focal adhesions and cell protrusions, cell cycle progression, cell proliferation and apoptosis. Required for early embryonic development and placenta development. Required for embryonic angiogenesis, normal cardiomyocyte migration and proliferation, and normal heart development. Regulates axon growth and neuronal cell migration, axon branching and synapse formation; required for normal development of the nervous system. Plays a role in osteogenesis and differentiation of osteoblasts. Functions in integrin signal transduction, but also in signaling downstream of numerous growth factor receptors, G-protein coupled receptors (GPCR), EPHA2, netrin receptors and LDL receptors. Forms multisubunit signaling complexes with SRC and SRC family members upon activation; this leads to the phosphorylation of additional tyrosine residues, creating binding sites for scaffold proteins, effectors and substrates. Regulates numerous signaling pathways. Promotes activation of phosphatidylinositol 3-kinase and the AKT1 signaling cascade. Promotes activation of MAPK1/ERK2, MAPK3/ERK1 and the MAP kinase signaling cascade. Promotes localized and transient activation of guanine nucleotide exchange factors (GEFs) and GTPase-activating proteins (GAPs), and thereby modulates the activity of Rho family GTPases. Signaling via CAS family members mediates activation of RAC1. Phosphorylates NEDD9 following integrin stimulation (PubMed:9360983). Recruits the ubiquitin ligase MDM2 to P53/TP53 in the nucleus, and thereby regulates P53/TP53 activity, P53/TP53 ubiquitination and proteasomal degradation. Phosphorylates SRC; this increases SRC kinase activity. Phosphorylates ACTN1, ARHGEF7, GRB7, RET and WASL. Promotes phosphorylation of PXN and STAT1; most likely PXN and STAT1 are phosphorylated by a SRC family kinase that is recruited to autophosphorylated PTK2/FAK1, rather than by PTK2/FAK1 itself. Promotes phosphorylation of BCAR1; GIT2 and SHC1; this requires both SRC and PTK2/FAK1. Promotes phosphorylation of BMX and PIK3R1. Isoform 6 (FRNK) does not contain a kinase domain and inhibits PTK2/FAK1 phosphorylation and signaling. Its enhanced expression can attenuate the nuclear accumulation of LPXN and limit its ability to enhance serum response factor (SRF)-dependent gene transcription.
Cellular Location	Cell junction, focal adhesion. Cell membrane {ECO:0000250|UniProtKB:Q00944}; Peripheral membrane protein {ECO:0000250|UniProtKB:Q00944}; Cytoplasmic side {ECO:0000250|UniProtKB:Q00944}. Cytoplasm, perinuclear region. Cytoplasm, cell cortex. Cytoplasm, cytoskeleton {ECO:0000250|UniProtKB:O35346}. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Nucleus. Cytoplasm, cytoskeleton, cilium basal body Cytoplasm Note=Constituent of focal adhesions. Detected at microtubules {ECO:0000250|UniProtKB:P34152}
Tissue Location	Detected in B and T-lymphocytes. Isoform 1 and isoform 6 are detected in lung fibroblasts (at protein level) Ubiquitous. Expressed in epithelial cells (at protein level) (PubMed:31630787).

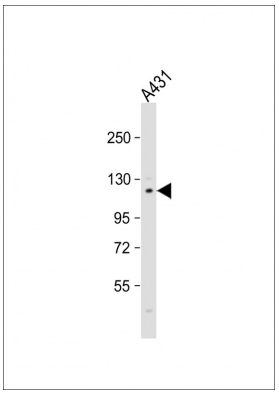
Background

FAK1 is a cytoplasmic protein tyrosine kinase which is found concentrated in the focal adhesions that form between cells growing in the presence of extracellular matrix constituents. This protein is a member of the FAK subfamily of protein tyrosine kinases but lacks significant sequence similarity to kinases from other subfamilies. Activation of the gene encoding FAK1 may be an important early step in cell growth and intracellular signal transduction pathways triggered in response to certain neural peptides or to cell interactions with the extracellular matrix.

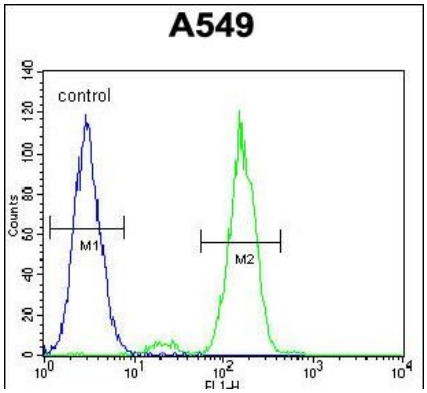
References

Okamoto, H., et al., Hepatology 38(5):1242-1249 (2003).
Moritake, H., et al., Cancer Genet. Cytogenet. 146(2):102-109 (2003).
Liu, X.W., et al., J. Biol. Chem. 278(41):40364-40372 (2003).
Avraham, H.K., et al., J. Biol. Chem. 278(38):36661-36668 (2003).
Giannoni, E., et al., J. Biol. Chem. 278(38):36763-36776 (2003).

Images



Anti-FAK1 Antibdoy (Y576) at 1:1000 dilution + A431 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 119 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



FAK1 Antibody (Y576) (Cat. #AP7702d) flow cytometric analysis of A549 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.