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FAK Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1053a

Product Information

Application	WB, E
Primary Accession	Q05397
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	4A9D6
Calculated MW	119233
Description	Focal adhesion kinase(FAK), with 1074 -amino acid protein(about 118 kDa), is a member of the FAK subfamily of protein tyrosine kinases but lacks significant sequence similarity to kinases from other subfamilies. FAK is concentrated at the basal edge of only basal keratinocytes that are actively migrating and rapidly proliferating in repairing burn wounds, and is activated and localized to the focal adhesions of spreading keratinocytes in culture. Thus, it has been postulated that FAK may have an important in vivo role in the re-epithelialization of human wounds. FAK protein tyrosine kinase activity has also been shown to increase in cells stimulated to grow by use of mitogenic neuropeptides or neurotransmitters acting through G protein-coupled receptors.
Immunogen	Purified recombinant fragment of FAK expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	5747
Other Names	Focal adhesion kinase 1, FADK 1, 2.7.10.2, Focal adhesion kinase-related nonkinase, FRNK, Protein phosphatase 1 regulatory subunit 71, PPP1R71, Protein-tyrosine kinase 2, p125FAK, pp125FAK, PTK2, FAK, FAK1
Dilution	WB~~1/500 - 1/2000 E~~N/A
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	FAK Antibody 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).

References

1. Madeleine Toutant, Jeanne-Marie Studler, et al.Mol. Cell. Biol., Nov 2002; 22: 7731 - 7743. 2. Danshan Huang, Anthony T. Cheung, et al. J. Biol. Chem, May 2002; 277: 18151 – 18160.

Images

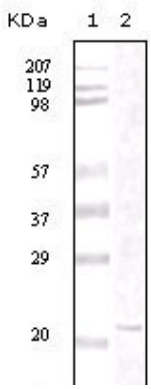


Figure 1: Western blot analysis using FAK mouse mAb against truncated FAK recombinant protein.

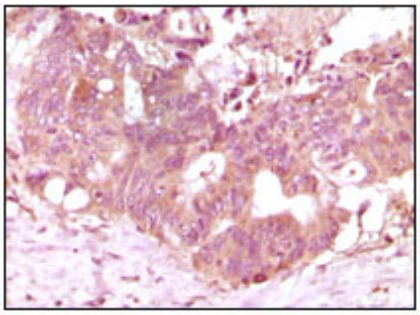


Figure 2: Immunohistochemical analysis of paraffin-embedded human recturn adenocarcinoma tissue showing cytoplasmic localization using FGF2 mouse mAb with DAB staining.

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