

### **FAK Antibody**

Rabbit Polyclonal Antibody Catalog # ABV10292

### **Specification**

### **FAK Antibody - Product Information**

Application
Primary Accession
Other Accession
Reactivity
Host
Clonality

Isotype Calculated MW WB, IF, IP Q05397 NP 005598

Human, Mouse, Rat

Rabbit Polyclonal Rabbit IgG 119233

### **FAK Antibody - Additional Information**

**Gene ID 5747** 

Application & Usage

Western blotting (1-2 µg/ml), immunoprecipitation (5-20 µg/ml), and immunocytochemistry (10-20 µg/ml). However, the optimal concentrations should be determined individually. The antibody recognizes 125 kDa FAK of human, mouse, and rat origins.

#### **Other Names**

FAK, FAK1, FAK-1, focal adhesion kinase 1, PTK2, protein tyrosine kinase 2, FADK1, pp125FAK

# **Target/Specificity**

FAK

#### **Antibody Form**

Liquid

#### **Appearance**

Colorless liquid

#### **Formulation**

 $100~\mu g$  (0.5 mg/ml) protein A purified rabbit polyclonal antibody in phosphate-buffered saline (PBS) containing 50% glycerol, 1% BSA, and 0.02% thimerosal.

## **Handling**

The antibody solution should be gently mixed before use.

## **Reconstitution & Storage**

-20 °C

# **Background Descriptions**



#### **Precautions**

FAK Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

### **FAK Antibody - 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: <a href="http://www.uniprot.org/citations/9360983" target="\_blank">9360983</a>). 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.

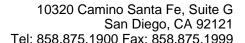
#### **Cellular Location**

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).

## **FAK Antibody - Protocols**





Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- <u>Immunohistochemistry</u>
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

FAK Antibody - Images

## FAK Antibody - Background

Focal adhesion kinase was identified as a 125 kDa substrate for the intrinsic protein tyrosine kinase activity of Src encoded pp60. The deduced amino acid sequence of FAK p125 has shown it to be a cytoplasmic protein tyrosine kinase whose sequence and structural organization are unique as compared to other proteins described to date. Localization of p125 by immunofluorescence s  $\mu$ ggests that it is primarily found in cellular focal adhesions leading to its designation as focal adhesion kinase (FAK). FAK is concentrated at the basal edge of only those 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 reepithelialization 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 thro  $\mu$ gh G protein coupled receptors.