

## Recombinant FAK protein

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**Catalog No:** 31168

**Expressed In:** Baculovirus

**Quantity:** 10 µg

**Concentration:** 0.237 µg/µl

**Source:** Human

**Buffer Contents:** Recombinant FAK protein (non-active) in 50 mM Tris-HCl, pH 8.0; 100 mM NaCl, 5 mM DTT, 15 mM reduced glutathione, 20% glycerol.

**Background:** **FAK** (Focal Adhesion Kinase-Related Nonkinase) is a 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. 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. 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.

**Protein Details:** Recombinant human FAK protein was produced using baculovirus infected Sf9 cells. The protein was made against amino acids A2-H1052, accession number L13616 and N-terminally fused to a GST-HIS6-Thrombin cleavage site. Purified by GSH-agarose affinity purification.

**Application Notes:** Recombinant FAK is suitable for Western blot. The M.W. of the protein is ~145 kDa.

This protein is non-active.

### References:

This product was used in the following publications:

Ott, H.M., *et al.* (2014). "A687V EZH2 is a driver of histone H3 lysine 27 (H3K27) hypertrimethylation." *Mol. Cancer Ther.* 13(12):3062-73. PMID: 25253781.

Xiong, X., *et al.* (2014). "Heat Shock Protein 90beta Stabilizes Focal Adhesion Kinase and Enhances Cell Migration and Invasion in Breast Cancer Cells." *Exp. Cell Res.* 326(1):78-89. PMID: 24880126.

**Storage and Guarantee:** Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is guaranteed for 6 months from date of receipt.

