

# p-FAK (A-12): sc-374668

## BACKGROUND

Activation of integrins in the extracellular matrix (ECM) of eukaryotic cells promotes the formation of membrane adhesion complexes, known as focal adhesions, which can include cytoskeletal proteins and protein tyrosine kinases, such as focal adhesion kinase (FAK). Phosphorylation events within focal adhesions influence numerous processes that include mitogenic signaling, cell survival and cell motility. FAK is a non-receptor tyrosine kinase that is ubiquitously expressed and highly conserved between species. FAK is recruited by integrin clusters and variably phosphorylated depending on the effector molecules present in the focal adhesion. Phosphorylation of FAK Tyr 397 decreases during serum starvation, contact inhibition and cell cycle arrest, all conditions under which activating FAK Tyr 407 phosphorylation increases.

## REFERENCE

- Schaller, M.D., et al. 1992. Pp125 FAK, a structurally distinctive protein-tyrosine kinase associated with focal adhesions. *Proc. Natl. Acad. Sci. USA* 89: 5192-5196.
- Hanks, S.K., et al. 1992. Focal adhesion protein-tyrosine kinase phosphorylated in response to cell attachment to Fibronectin. *Proc. Natl. Acad. Sci. USA* 89: 8487-8491.

## CHROMOSOMAL LOCATION

Genetic locus: PTK2 (human) mapping to 8q24.3; Ptk2 (mouse) mapping to 15 D3.

## SOURCE

p-FAK (A-12) is a mouse monoclonal antibody epitope corresponding to a short amino acid sequence containing Ser 722 phosphorylated focal adhesion kinase (FAK) of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-FAK (A-12) is available conjugated to agarose (sc-374668 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374668 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374668 PE), fluorescein (sc-374668 FITC), Alexa Fluor<sup>®</sup> 488 (sc-374668 AF488), Alexa Fluor<sup>®</sup> 546 (sc-374668 AF546), Alexa Fluor<sup>®</sup> 594 (sc-374668 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-374668 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-374668 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-374668 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-374668 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

p-FAK (A-12) is recommended for detection of Ser 722 phosphorylated FAK of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

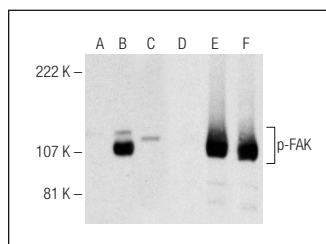
p-FAK (A-12) is also recommended for detection of correspondingly phosphorylated FAK in additional species, including equine, canine and avian.

Suitable for use as control antibody for FAK siRNA (h): sc-29310, FAK siRNA (m): sc-35353, FAK shRNA Plasmid (h): sc-29310-SH, FAK shRNA Plasmid (m): sc-35353-SH, FAK shRNA (h) Lentiviral Particles: sc-29310-V and FAK shRNA (m) Lentiviral Particles: sc-35353-V.

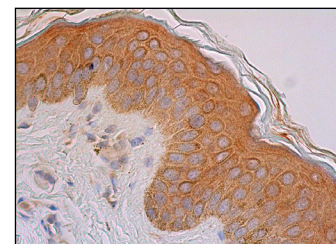
Molecular Weight of p-FAK: 125 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HeLa whole cell lysate: sc-2200 or FAK (h): 293T Lysate: sc-114600.

## DATA



Western blot analysis of FAK phosphorylation in non-transfected: sc-117752 (A,D), untreated human FAK transfected: sc-114600 (B,E) and lambda protein phosphatase (sc-200312A) treated human FAK transfected: sc-114600 (C,F) 293T whole cell lysates. Antibodies tested include p-FAK (A-12): sc-374668 (A,B,C) and FAK (C-903): sc-932 (D,E,F).



p-FAK (A-12): sc-374668. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of keratinocytes, fibroblasts, Langerhans cells and melanocytes.

## SELECT PRODUCT CITATIONS

- Sa, S., et al. 2014. Combinatorial Fibronectin and laminin signaling promote highly efficient cardiac differentiation of human embryonic stem cells. *Biores. Open Access* 3: 150-161.
- Wu, H., et al. 2020. Specific inhibition of FAK signaling attenuates subchondral bone deterioration and articular cartilage degeneration during osteoarthritis pathogenesis. *J. Cell. Physiol.* 235: 8653-8666.
- Yang, B., et al. 2021. Enhanced mechanosensing of cells in synthetic 3D matrix with controlled biophysical dynamics. *Nat. Commun.* 12: 3514.
- Shologu, N., et al. 2022. Macromolecular crowding in the development of a three-dimensional organotypic human breast cancer model. *Biomaterials* 287: 121642.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.