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Product Information

Anti-phospho-FAK (pTyr^{397})
produced in rabbit, affinity isolated antibody

Catalog Number **F7926**

Product Description

Anti-phospho-FAK (pTyr^{397}) was produced in rabbit using as immunogen a synthetic phosphopeptide derived from the region of FAK that contains Tyr^{397}. The serum is affinity purified using epitope-specific affinity chromatography. The antibody is preadsorbed to remove any reactivity towards: (i) a non-phosphorylated FAK enzyme and (ii) the corresponding region of phosphorylated Pyk2/CAKβ enzyme (a FAK-related enzyme).

The antibody specifically recognizes FAK (Focal Adhesion Kinase) phosphorylated at tyrosine 397 (125 kDa). The antibody detects human, mouse, rat, *Drosophila* and frog FAK (pTyr^{397}). It has been used in immunoblotting

Integrins, adhesion receptors for extracellular matrix proteins, are involved in cell proliferation, apoptosis, migration and spreading. Integrin signaling is activated during epithelial-mesenchymal transdifferentiation (EMT) and cell migration processes serving as models for carcinogenesis.[1,2] FAK is a cytoplasmic protein tyrosine kinase involved in several integrin-mediated signaling pathways. These signaling cascades are initiated when an integrin interacts with components of the extracellular matrix triggering phosphorylation of FAK at multiple sites. Specifically FAK regulates cell differentiation, adhesion, migration and acceleration of the G1 to S phase transition of the cell cycle.[2,3,4,5]

FAK autophosphorylation is critical for maximum adhesion and migration responses. Integrin-induced autophosphorylation of FAK at Tyr^{397} (the major autophosphorylation site) creates a binding site on FAK for Src-family kinases.[8] Src then binds to and phosphorylates Tyr^{925}, localized in the paxillin binding domain. This creates a Grb2 SH2-domain binding site and provides a link to the activation of the Ras signal transduction pathway.[6] Tyrosine 576 and 577, located in the activation loop of the kinase domain of FAK, are also phosphorylated by Src. FAK's catalytic activity may be increased by phosphorylation of these residues.[7]

While phosphorylation of FAK at Tyr^{397} occurs even in sedentary cells and is localized exclusively at the cytoplasm, the phosphorylation of Tyr^{407} and Tyr^{861} is induced during EMT and further augmented during cell migration.[1]

Reagent

Supplied as a solution in Dulbecco's phosphate buffered saline (without Mg^{2+} and Ca^{2+}), pH 7.3, with 50% glycerol, 1.0 mg/ml BSA (IgG and protease free) and 0.05% sodium azide.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store at –20 °C. We recommend a brief centrifugation before opening to settle vial contents. For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

A recommended working dilution of 1:1,000 is determined by immunoblotting using NIH3T3 cells treated with PDGF. Data demonstrates that only phosphopeptide corresponding to the region containing tyrosine^{397} blocks the antibody signal, which confirms the specificity of the Anti-phospho-FAK (pTyr^{397}) for this phosphorylated residue.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

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