10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

FGFR2 Antibody (N-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7637a

Product Information

Application	WB, IHC-P, IF, FC, E
Primary Accession	P21802
Other Accession	P21803
Reactivity	Human, Mouse
Predicted	Rat, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	92025
Antigen Region	22-51

Additional Information

Gene ID	2263
Other Names	Fibroblast growth factor receptor 2, FGFR-2, K-sam, KGFR, Keratinocyte growth factor receptor, CD332, FGFR2, BEK, KGFR, KSAM
Target/Specificity	This FGFR2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 22-51 amino acids from the N-terminal region of human FGFR2.
Dilution	WB~~1:1000 IHC-P~~1:100~500 IF~~1:50~100 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	FGFR2 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	FGFR2
Synonyms	BEK, KGFR, KSAM

Function	Tyrosine-protein kinase that acts as a cell-surface receptor for fibroblast growth factors and plays an essential role in the regulation of cell proliferation, differentiation, migration and apoptosis, and in the regulation of embryonic development. Required for normal embryonic patterning, trophoblast function, limb bud development, lung morphogenesis, osteogenesis and skin development. Plays an essential role in the regulation of osteoblast differentiation, proliferation and apoptosis, and is required for normal skeleton development. Promotes cell proliferation in keratinocytes and immature osteoblasts, but promotes apoptosis in differentiated osteoblasts. Phosphorylates PLCG1, FRS2 and PAK4. Ligand binding leads to the activation of several signaling cascades. Activation of PLCG1 leads to the production of the cellular signaling molecules diacylglycerol and inositol 1,4,5-trisphosphate. Phosphorylation of FRS2 triggers recruitment of GRB2, GAB1, PIK3R1 and SOS1, and mediates activation of RAS, MAPK1/ERK2, MAPK3/ERK1 and the MAP kinase signaling pathway, as well as of the AKT1 signaling pathway. FGFR2 signaling is down-regulated by ubiquitination, internalization and degradation. Mutations that lead to constitutive kinase activation or impair normal FGFR2 maturation, internalization and degradation lead to aberrant signaling. Over-expressed FGFR2 promotes activation of STAT1.
Cellular Location	Cell membrane; Single-pass type I membrane protein. Golgi apparatus. Cytoplasmic vesicle. Note=Detected on osteoblast plasma membrane lipid rafts. After ligand binding, the activated receptor is rapidly internalized and degraded [Isoform 3]: Cell membrane; Single-pass type I membrane protein. Note=After ligand binding, the activated receptor is rapidly internalized and degraded [Isoform 13]: Secreted.

Background

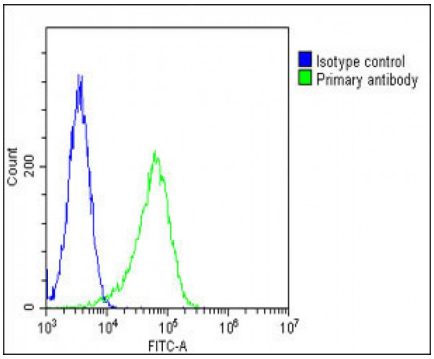
FGFR2 is a member of the fibroblast growth factor receptor family, where amino acid sequence is highly conserved between members and throughout evolution. FGFR family members differ from one another in their ligand affinities and tissue distribution. A full-length representative protein consists of an extracellular region, composed of three immunoglobulin-like domains, a single hydrophobic membrane-spanning segment and a cytoplasmic tyrosine kinase domain. The extracellular portion of the protein interacts with fibroblast growth factors, setting in motion a cascade of downstream signals, ultimately influencing mitogenesis and differentiation. This particular family member is a high-affinity receptor for acidic, basic and/or keratinocyte growth factor, depending on the isoform. Mutations in the gene are associated with many craniosynostotic syndromes and bone malformations. The genomic organization of the gene encompasses 20 exons. Alternative splicing in multiple exons, including those encoding the Ig-like domains, the transmembrane region and the carboxyl terminus, results in varied isoforms which differ in structure and specificity. Isoform 1 has equal affinity for aFGF and bFGF but does not bind KGF.

References

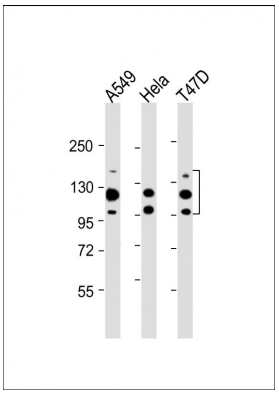
Freeman, K.W., et al., Cancer Res. 63(19):6237-6243 (2003). Goriely, A., et al., Science 301(5633):643-646 (2003). Fomenkov, A., et al., J. Biol. Chem. 278(26):23906-23914 (2003). Katoh, M., et al., Int. J. Mol. Med. 11(5):579-583 (2003). Katoh, M., et al., Int. J. Oncol. 22(5):1155-1159 (2003).

Images

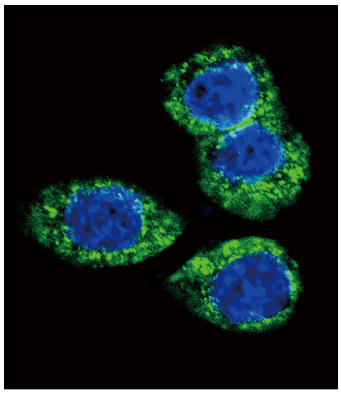
Overlay histogram showing Hela cells stained with AP7637a(green line). The cells were fixed with 2% paraformaldehyde (10 min) and then permeabilized with 90% methanol for 10 min. The cells were then icubated in 2% bovine serum albumin to block non-specific



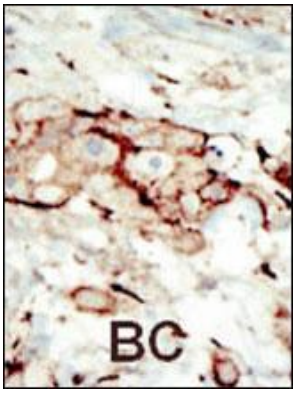
protein-protein interactions followed by the antibody (AP7637a, 1:25 dilution) for 60 min at 37°C. The secondary antibody used was Goat-Anti-Rabbit IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed(OH191631) at 1/200 dilution for 40 min at 37°C. Isotype control antibody (blue line) was rabbit IgG1 (1µg/1x10^6 cells) used under the same conditions. Acquisition of >10, 000 events was performed.



All lanes : Anti-FGFR2 Antibody (N-term) at 1:2000 dilution Lane 1: A549 whole cell lysate Lane 2: Hela whole cell lysate Lane 3: T47D whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 92 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Confocal immunofluorescent analysis of FGFR2 Antibody (N-term)(Cat#AP7637a) with Hela cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green).DAPI was used to stain the cell nuclear (blue).



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

Citations

- E2F-1-deficient NOD/SCID mice developed showing decreased saliva production.
- Induction of stem cell gene expression in adult human fibroblasts without transgenes.
- miR-223 regulates adipogenic and osteogenic differentiation of mesenchymal stem cells through a C/EBPs/miR-223/FGFR2 regulatory feedback loop.
- A tissue-engineered model of fetal distal lung tissue.
- Regulation of 25-hydroxyvitamin D-1-hydroxylase and 24-hydroxylase in keratinocytes by PTH and FGF23.
- Reprogramming of mesenchymal stem cells by the synovial sarcoma-associated oncogene SYT-SSX2.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.