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FGFR3 Antibody

Catalog # ASC11679

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	P22607
Other Accession	NP_001156685, 254028242
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	87710
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	FGF3 antibody can be used for detection of FGFR3 by Western blot at 1 - 2 g/mL.

Additional Information

Gene ID	2261
Other Names	Fibroblast growth factor receptor 3, FGFR-3, 2.7.10.1, CD333, FGFR3, JTK4
Target/Specificity	FGFR3; FGFR3 antibody is human, mouse and rat reactive. At least three isoforms of FGFR3 are known to exist; this antibody will detect all three.
Reconstitution & Storage	FGFR3 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	FGFR3 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	FGFR3
Synonyms	JTK4
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 and apoptosis. Plays an essential role in the regulation of chondrocyte differentiation, proliferation and apoptosis, and is required for normal skeleton development. Regulates both osteogenesis and postnatal bone mineralization by osteoblasts. Promotes apoptosis in chondrocytes, but can also promote cancer cell proliferation. Required for normal development of the inner ear. Phosphorylates PLCG1, CBL and FRS2. 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. Plays a role in the regulation of vitamin D metabolism. Mutations that lead to constitutive kinase activation or impair normal FGFR3 maturation, internalization and degradation lead to aberrant signaling. Over-expressed or constitutively activated FGFR3 promotes activation of PTPN11/SHP2, STAT1, STAT5A and STAT5B. Secreted isoform 3 retains its capacity to bind FGF1 and FGF2 and hence may interfere with FGF signaling.
Cellular Location	[Isoform 1]: Cell membrane; Single-pass type I membrane protein. Cytoplasmic vesicle. Endoplasmic reticulum. Note=The activated receptor is rapidly internalized and degraded. Detected in intracellular vesicles after internalization of the autophosphorylated receptor [Isoform 3]: Secreted.
Tissue Location	Expressed in brain, kidney and testis. Very low or no expression in spleen, heart, and muscle. In 20- to 22-week old fetuses it is expressed at high level in kidney, lung, small intestine and brain, and to a lower degree in spleen, liver, and muscle. Isoform 2 is detected in epithelial cells. Isoform 1 is not detected in epithelial cells. Isoform 1 and isoform 2 are detected in fibroblastic cells.

Background

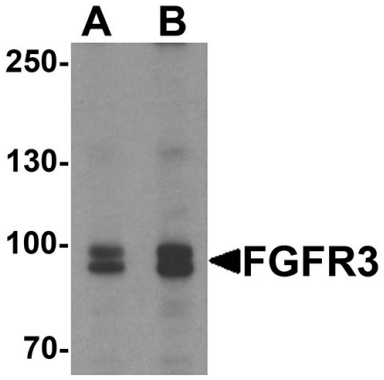
FGFR3 Antibody: FGFR3 is a tyrosine-protein kinase that acts as cell-surface receptor for fibroblast growth factors and plays an essential role in the regulation of cell proliferation, differentiation and apoptosis (1). It is required for normal skeleton development and promotes apoptosis in chondrocytes and cancer cell proliferation. FGFR3 protein contains three immunoglobulin-like domains, a single hydrophobic membrane-spanning segment and a cytoplasmic tyrosine kinase domain (1,2). It is alternatively spliced to produce three isoforms that are expressed in brain, kidney and testis. Defects in FGFR3 are associated with several diseases, including achondroplasia and hypochondroplasia (3,4). Mutations in FGFR3 are also a cause of some bladder and cervical cancers (5).

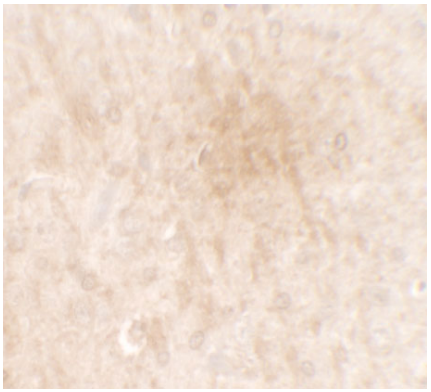
References

Keegan K, Johnson DE, and Williams LT. Isolation of an additional member of the fibroblast growth factor receptor family, FGFR-3. Proc. Natl. Acad. Sci. USA 1991; 88:1095-9.
Turner N and Grose R. Fibroblast growth factor signalling: from development to cancer. Nat. Rev. Cancer 2010; 10:116-29.
Superti-Furga A, Eich G, Bucher HU, et al. A glycine 375-to-cysteine substitution in the transmembrane domain of the fibroblast growth factor receptor-3 in a newborn with achondroplasia. Eur. J. Pediatr. 1995; 154:215-9.
Bellus GA, McIntosh I, Smith EA, et al. A recurrent mutation in the tyrosine kinase domain of fibroblast growth factor receptor 3 causes hypochondroplasia. Nat. Genet. 1995; 10:357-9.

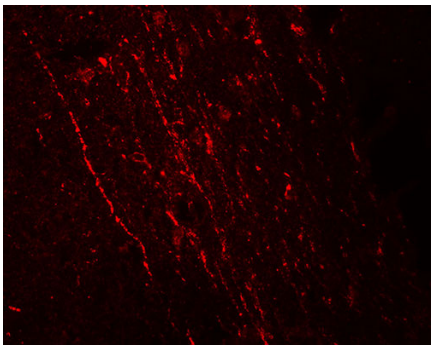
Images

Western blot analysis of FGFR3 in SK-N-SH cell lysate with FGFR3 antibody at (A) 0.5 and (B) 1 µg/mL.





Immunohistochemistry of FGFR3 in rat brain tissue with FGFR3 antibody at 2.5 µg/mL.



Immunofluorescence of FGFR3 in rat brain tissue with FGFR3 antibody at 20 µg/mL.