

p-FGFR-3 (Tyr 724): sc-33041

BACKGROUND

Acidic and basic fibroblast growth factors (FGFs) are members of a family of multifunctional polypeptide growth factors that stimulate proliferation of cells of mesenchymal, epithelial and neuroectodermal origin. These receptors usually contain an extracellular ligand-binding region containing three immunoglobulin-like domains, a transmembrane domain and a cytoplasmic tyrosine kinase domain. The gene encoding human FGFR-3 maps to chromosome 4p16.3 and is alternatively spliced to produce three isoforms that are expressed in brain, kidney and testis. Defects in FGFR-3 are associated with several diseases, including Crouzon syndrome, achondroplasia, thanatophoric dysplasia, craniosynostosis adelaide type and hypochondroplasia. Mutations in FGFR-3 are also a cause of some bladder and cervical cancers. Amino acid substitutions within the tyrosine kinase domain activation loop of FGFR-3 result in autophosphorylation of tyrosine residues in the intracellular domain. Phosphorylation at residue Tyr 724 abolishes all FGFR-3 tyrosine phosphorylation.

REFERENCES

- Moscatelli, D., et al. 1987. Mr 25,000 heparin-binding protein from guinea pig brain is a high molecular weight form of basic fibroblast growth factor. *Proc. Natl. Acad. Sci. USA* 84: 5778-5782.
- Rifkin, D.B., et al. 1989. Recent developments in the cell biology of fibroblast growth factor. *J. Cell Biol.* 109: 1-6.
- Dionne, C.A., et al. 1990. Cloning and expression of two distinct high-affinity receptors cross-reacting with acidic and basic fibroblast growth factors. *EMBO J.* 9: 2685-2692.
- Mansukhani, A., et al. 1992. Characterization of the murine Bek fibroblast growth factor (FGF) receptor: activation by three members of the FGF family and requirement for heparin. *Proc. Natl. Acad. Sci. USA* 89: 3305-3309.
- Scotet, E., et al. 1995. The choice between alternative IIIb and IIIc exons of the FGFR-3 gene is not strictly tissue-specific. *Biochim. Biophys. Acta* 1264: 238-242.
- Superti-Furga, A., et al. 1995. 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.* 154: 215-219.
- Tavormina, P.L., et al. 1995. Thanatophoric dysplasia (types I and II) caused by distinct mutations in fibroblast growth factor receptor-3. *Nat. Genet.* 9: 321-328.
- Bellus, G.A., et al. 1995. A recurrent mutation in the tyrosine kinase domain of fibroblast growth factor receptor-3 causes hypochondroplasia. *Nat. Genet.* 10: 357-359.

CHROMOSOMAL LOCATION

Genetic locus: FGFR3 (human) mapping to 4p16.3; Fgfr3 (mouse) mapping to 5 B2.

SOURCE

p-FGFR-3 (Tyr 724) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 724 phosphorylated FGFR-3 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-33041 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-FGFR-3 (Tyr 724) is recommended for detection of Tyr 724 phosphorylated FGFR-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); may cross-react with correspondingly phosphorylated FGFR-1 and FGFR-2.

p-FGFR-3 (Tyr 724) is also recommended for detection of correspondingly phosphorylated FGFR-3 in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for FGFR-3 siRNA (h): sc-29314, FGFR-3 siRNA (m): sc-35367, FGFR-3 shRNA Plasmid (h): sc-29314-SH, FGFR-3 shRNA Plasmid (m): sc-35367-SH, FGFR-3 shRNA (h) Lentiviral Particles: sc-29314-V and FGFR-3 shRNA (m) Lentiviral Particles: sc-35367-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Yadav, V., et al. 2012. Reactivation of mitogen-activated protein kinase (MAPK) pathway by FGF receptor 3 (FGFR3)/Ras mediates resistance to vemurafenib in human B-RAF V600E mutant melanoma. *J. Biol. Chem.* 287: 28087-28098.
- Zhang, X., et al. 2014. High-level expression, purification, and characterization of bifunctional ScFv-9R fusion protein. *Appl. Microbiol. Biotechnol.* 98: 5499-5506.

STORAGE

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

RESEARCH USE

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