abcam

Product datasheet

Anti-FGFR1 antibody - ChIP Grade ab10646

3 Abreviews 31 References 6 图像

概述

产品名称	Anti-FGFR1抗体- ChIP Grade
描述	**兔多克隆抗体**to FGFR1 - ChIP Grade
宿主	Rabbit
特异性	ab10646 does not react with human FGFR2 and FGFR3.
经测试应用	**适用于:** IHC-P, WB, IP, IHC-Fr, ICC/IF, ChIP
种属反应性	**与反应:** Mouse, Rat, Human
免疫原	Synthetic peptide corresponding to Human FGFR1 aa 360-373 conjugated to Keyhole Limpet Haemocyanin (KLH). Human FGFR1 synthetic peptide with a C-terminally added lysine. Sequence: EALEERPAVMTSPLK Run BLAST with Run BLAST with
阳性对照	IHC-Fr: Human fetal cardiac tissue. ICC/IF: HeLa and NIH/3T3 cells. IHC-P: Human umbilical cord tissue.
常规说明	Fibroblast growth factors (FGFs) are members of a large family of structurally related polypeptides (17-38 kDa) that are potent physiological regulators of growth and differentiation of a wide variety of cells of mesodermal, ectodermal and endodermal origin. FGFs are substantially involved in normal development, wound healing and repair, angiogenesis, a variety of neurotrophic activities, in hematopoiesis as well as in tissue remodeling and maintenance. They also have been implicated in pathological conditions such as tumorigenesis and metastasis. To date, the FGF family consists of at least 23 members designated FGF1 through FGF23. Four genes encoding for high affinity cell surface FGF receptors (FGFRs) have been identified: FGFR1 [flg-1(fms-like gene 1)]; FGFR2 [bek (bacterial expressed kinase gene product)]; FGFR3 (cek-2), and FGFR4. Multiple additional variants (isoforms) arising by alternative splicing have been reported: soluble, secreted, or possibly cleaved forms of FGFR1 and FGFR2 have also been found in body fluids or were artificially constructed, [e.g. a soluble FGF-binding protein containing the extracellular region of FGFR1 and the secreted form of placental alkaline phosphatase (FRAP1)]. FGFRs are members of the tyrosine kinase family of growth factor receptors. They are glycosylated 110- 150 kDa proteins that are constructed of an extracellular ligand binding region with either two (alpha type) or typically three (alpha type) immunoglbulin (Ig)-like domains and an eight amino acid acidic box, a transmembrane region, and a cytoplasmic split tyrosine kinase domain that is activated following ligand binding and receptor dimerization. The ligand binding site of FGFRs is confined to the extracellular Ig-like domains 2 and 3. FGFRs exhibit overlapping recognition and redundant specificity. One receptor type may bind with a similar affinity several of the FGFs. Also one FGF type may bind

similarly to several distinct receptors. This accounts for the rather identical effects of different FGF ligands on common cell types. FGF's binding to cellular FGFRs depend on or is markedly facilitated by the low-affinity interaction of FGF with the polysaccharide component of the cell surface or extracellular matrix heparan sulfate proteoglycans (HSPG). For example, perlecan, a basement membrane HSPG, promotes high affinity binding of FGF2 in vitro and angiogenesis in vivo. Signal transduction by FGFRs requires dimerization or oligomerization and autophosphorylation of the receptors through their tyrosine kinase domain. Subsequent association with cytoplasmic signaling molecules leads to DNA synthesis or differentiation. The signaling and biological responses elicited by distinct FGFRs substantially differ and are dictated by the intracellular domain. At the mRNA level, FGFR1 is highly expressed in developing human tissues including the brain (preferentially in neurons), vascular basement membranes, skin, and bone growth plates. It may be found in most anchorage dependent cells on their membrane and also may be localized around and in nuclei. Pfeiffer syndrome, as well as other disorders of human skeletal development, is the result of a mutation in the extracellular domain of FGFR1.

性能

形式	Liquid
存放说明	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
存储溶液	Preservative: 15mM Sodium Azide Constituents: 1% BSA, 10mM PBS, pH 7.4
纯度	Immunogen affinity purified
纯化说明	The product is an affinity-purified antibody prepared from pooled sera.
Primary antibody说明	Fibroblast growth factors (FGFs) are members of a large family of structurally related polypeptides (17-38 kDa) that are potent physiological regulators of growth and differentiation of a wide variety of cells of mesodermal, ectodermal and endodermal origin. FGFs are substantially involved in normal development, wound healing and repair, angiogenesis, a variety of neurotrophic activities, in hematopoiesis as well as in tissue remodeling and maintenance. They also have been implicated in pathological conditions such as tumorigenesis and metastasis. To date, the FGF family consists of at least 23 members designated FGF1 through FGF23. Four genes encoding for high affinity cell surface FGF receptors (FGFRs) have been identified: FGFR1 [flg-1(fms-like gene 1)]; FGFR2 [bek (bacterial expressed kinase gene product)]; FGFR3 (cek-2), and FGFR4. Multiple additional variants (isoforms) arising by alternative splicing have been reported: soluble, secreted, or possibly cleaved forms of FGFR1 and FGFR2 have also been found in body fluids or were artificially constructed, [e.g. a soluble FGF-binding protein containing the extracellular region of FGFR1 and the secreted form of placental alkaline phosphatase (FRAP1)]. FGFRs are members of the tyrosine kinase family of growth factor receptors. They are glycosylated 110- 150 kDa proteins that are constructed of an extracellular ligand binding region with either two (alpha type) or typically three (alpha type) immunoglbulin (Ig)-like domains and an eight amino acid acidic box, a transmembrane region, and a cytoplasmic split tyrosine kinase domain that is activated following ligand binding and receptor dimerization. The ligand binding site of FGFRs is confined to the extracellular Ig-like domains 2 and 3. FGFRs exhibit overlapping recognition and redundant specificity. One receptor type may bind with a similar affinity several of the FGFs. Also one FGF type may bind similarly to several distinct receptors. This accounts for the rather identical effects of different FGF ligands on common cell types. FGF's binding to cellular FGFRs depend on or is markedly facilitated by the low-affinity interaction of FGF with the polysaccharide component of the cell

surface or extracellular matrix heparan sulfate proteoglycans (HSPG). For example, perlecan, a basement membrane HSPG, promotes high affinity binding of FGF2 in vitro and angiogenesis in vivo. Signal transduction by FGFRs requires dimerization or oligomerization and autophosphorylation of the receptors through their tyrosine kinase domain. Subsequent association with cytoplasmic signaling molecules leads to DNA synthesis or differentiation. The signaling and biological responses elicited by distinct FGFRs substantially differ and are dictated by the intracellular domain. At the mRNA level, FGFR1 is highly expressed in developing human tissues including the brain (preferentially in neurons), vascular basement membranes, skin, and bone growth plates. It may be found in most anchorage dependent cells on their membrane and also may be localized around and in nuclei. Pfeiffer syndrome, as well as other disorders of human skeletal development, is the result of a mutation in the extracellular domain of FGFR1.

克隆	**多克隆**
同种型	IgG

应用

Our Abpromise guarantee covers the use of **ab10646** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

应用	Ab评论	说明
IHC-P		1/200. Perform enzymatic antigen retrieval before commencing with IHC staining protocol. The epitopes recognized by the antibody are resistant to routine formalin-fixation and paraffin embedding, and to other fixatives e.g. Methacarn, Bouins solution, ethanol and B5.
WB	★★☆☆☆	1/400. This was determined by blotting using an extract of FGFR-1 transfected cells.
IP		Use at an assay dependent concentration.
IHC-Fr	★★★★★	1/300.
ICC/IF	★★★★☆	1/200.
ChIP		Use at an assay dependent concentration. PubMed: 22514272

靶标

功能	Receptor for basic fibroblast growth factor. Receptor for FGF23 in the presence of KL (By similarity). A shorter form of the receptor could be a receptor for FGF1 (aFGF).
组织特异性	Detected in astrocytoma, neuroblastoma and adrenal cortex cell lines. Some isoforms are detected in foreskin fibroblast cell lines, however isoform 17, isoform 18 and isoform 19 are not detected in these cells.
疾病相关	Defects in FGFR1 are a cause of Pfeiffer syndrome (PS) [MIM:101600]; also known as acrocephalosyndactyly type V (ACS5). PS is characterized by craniosynostosis (premature fusion of the skull sutures) with deviation and enlargement of the thumbs and great toes, brachymesophalangy, with phalangeal ankylosis and a varying degree of soft tissue syndactyly. Defects in FGFR1 are a cause of idiopathic hypogonadotropic hypogonadism (IHH)

[MIM:146110]. IHH is defined as a deficiency of the pituitary secretion of follicle-stimulating hormone and luteinizing hormone, which results in the impairment of pubertal maturation and of reproductive function.
Defects in FGFR1 are the cause of Kallmann syndrome type 2 (KAL2) [MIM:147950]; also known as hypogonadotropic hypogonadism and anosmia. Anosmia or hyposmia is related to the absence or hypoplasia of the olfactory bulbs and tracts. Hypogonadism is due to deficiency in gonadotropin-releasing hormone and probably results from a failure of embryonic migration of gonadotropin-releasing hormone-synthesizing neurons. In some cases, midline cranial anomalies (cleft lip/palate and imperfect fusion) are present and anosmia may be absent or inconspicuous.
Defects in FGFR1 are the cause of osteoglophonic dysplasia (OGD) [MIM:166250]; also known as osteoglophonic dwarfism. OGD is characterized by craniosynostosis, prominent supraorbital ridge, and depressed nasal bridge, as well as by rhizomelic dwarfism and nonossifying bone lesions. Inheritance is autosomal dominant.
Defects in FGFR1 are the cause of trigonocephaly non-syndromic (TRICEPH) [MIM:190440]; also known as metopic craniosynostosis. The term trigonocephaly describes the typical keel-shaped deformation of the forehead resulting from premature fusion of the frontal suture. Trigonocephaly may occur also as a part of a syndrome.
Note=A chromosomal aberration involving FGFR1 may be a cause of stem cell leukemia lymphoma syndrome (SCLL). Translocation t(8;13)(p11;q12) with ZMYM2. SCLL usually presents as lymphoblastic lymphoma in association with a myeloproliferative disorder, often accompanied by pronounced peripheral eosinophilia and/or prominent eosinophilic infiltrates in the affected bone marrow.
Note=A chromosomal aberration involving FGFR1 may be a cause of stem cell myeloproliferative disorder (MPD). Translocation t(6;8)(q27;p11) with FGFR1OP. Insertion ins(12;8)(p11;p11p22) with FGFR1OP2. MPD is characterized by myeloid hyperplasia, eosinophilia and T-cell or B-cell lymphoblastic lymphoma. In general it progresses to acute myeloid leukemia. The fusion proteins FGFR1OP2-FGFR1, FGFR1OP-FGFR1 or FGFR1-FGFR1OP may exhibit constitutive kinase activity and be responsible for the transforming activity.
Note=A chromosomal aberration involving FGFR1 may be a cause of stem cell myeloproliferative disorder (MPD). Translocation t(8;9)(p12;q33) with CEP110. MPD is characterized by myeloid hyperplasia, eosinophilia and T-cell or B-cell lymphoblastic lymphoma. In general it progresses to acute myeloid leukemia. The fusion protein CEP110-FGFR1 is found in the cytoplasm, exhibits constitutive kinase activity and may be responsible for the transforming activity.

序列相似性

Belongs to the protein kinase superfamily. Tyr protein kinase family. Fibroblast growth factor receptor subfamily.
Contains 3 Ig-like C2-type (immunoglobulin-like) domains.
Contains 1 protein kinase domain.

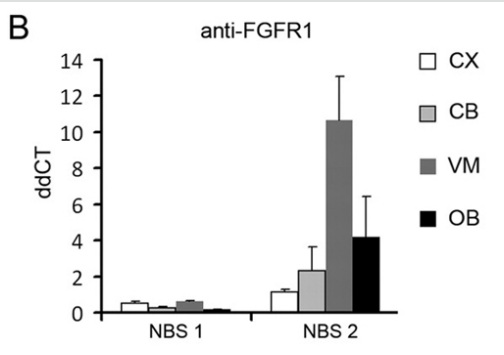
翻译后修饰

Binding of FGF1 and heparin promotes autophosphorylation on tyrosine residues and activation of the receptor.

细胞定位

Membrane. Nucleus. Cytoplasm. Cytoplasmic vesicle

图片

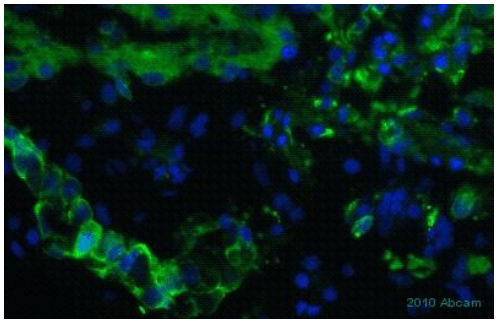


ChIP - Anti-FGFR1 antibody - ChIP Grade (ab10646)

Image from Baron O et al., J Biol Chem. 2012 Jun 8;287(24):19827-40. Epub 2012 Apr 18. Fig 6.; doi: 10.1074/jbc.M112.347831; June 8, 2012 The Journal of Biological Chemistry, 287, 19827-19840.

ChIP analysis of rat brain lysates, using ab10646 binding FGFR1. Subsequent quantitative PCR analyses of selected potential NBS on the TH gene were performed.

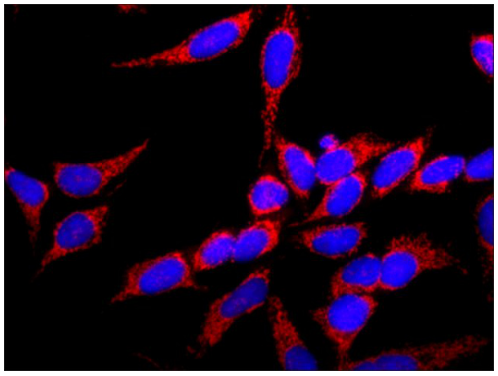
CX, cortex; CB, cerebellum; VM, ventral midbrain (containing substantia nigra region); OB, olfactory bulb.



Immunohistochemistry (Frozen sections) - Anti-FGFR1 antibody - ChIP Grade (ab10646)

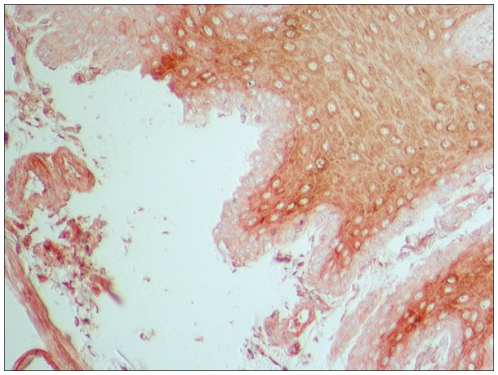
Image is courtesy of an anonymous AbReview.

Immunohistochemical analysis of PFA-fixed frozen human fetal cardiac tissue, labelling FGFR1 with ab10646 at a dilution of 1/300 incubated for 1 hour at 37°C in 10% goat serum, 0.01% Triton & 0.1% saponin in PBS. Permeabilization was done with 0.1% saponin. Blocking was with 10% goat serum incubated at 37°C for 45 minutes. Secondary was a goat anti-rabbit polyclonal Alexa Fluor® 488 conjugate at 1/600.



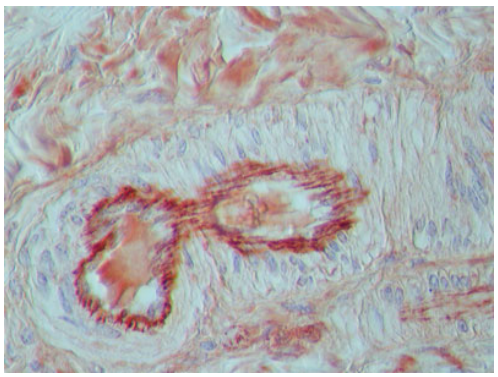
Immunocytochemistry/ Immunofluorescence - Anti-FGFR1 antibody - ChIP Grade (ab10646)

Immunocytochemical immunofluorescence analysis of methanol fixed HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labelling FGFR1 with ab10646 at a 1/100 dilution. Cells were fixed, then permeabilized. The secondary antibody used was a Goat Anti-Rabbit IgG, Cy3™ conjugate (red). Cells were counterstained with DAPI (blue) to stain nuclei.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-FGFR1 antibody - ChIP Grade (ab10646)

Immunohistochemical analysis of formalin-fixed paraffin-embedded human umbilical cord sections, labeling FGFR1 with ab10646 at a 5 µg/mL concentration. The secondary used was a biotin-anti-Rabbit IgG Peroxidase.

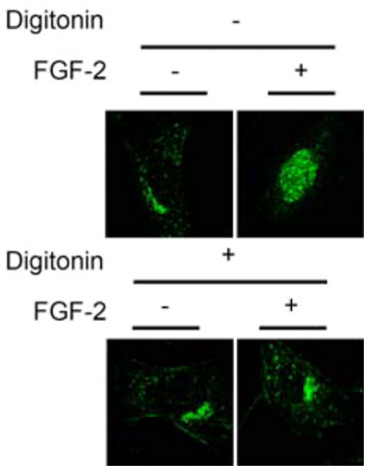


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-FGFR1 antibody - ChIP Grade (ab10646)

Immunohistochemical analysis of formalin-fixed paraffin-embedded human umbilical cord sections, labeling FGFR1 with ab10646 at a 1/200 dilution.

Biotinylated secondary followed by avidin-HRP and AEC substrate, hematoxylin counterstain.

Antigen retrieval: 0.1% trypsin for 15 minutes at 37°C.



Immunocytochemistry/ Immunofluorescence - Anti-FGFR1 antibody - ChIP Grade (ab10646)

Image from Wang YN et al., J Biol Chem. 2012 May 11;287(20):16869-79. Epub 2012 Mar 28. Fig 1.; doi: 10.1074/jbc.M111.314799; May 11, 2012 The Journal of Biological Chemistry, 287, 16869-16879.

Immunofluorescence analysis of NIH/3T3 (Mouse embryo fibroblast cell line) cells, staining FGFR1 using ab10646.

Top row: Cells were either untreated (left) or treated with FGF2 (50 ng/ml) (right) for 60 minutes.
Bottom row: Cells were permeabilized with digitonin, and either untreated (left) or treated with FGF2 (50 ng/ml) (right) for 60 minutes.

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