Human FGF-3 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF1206

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human FGF-3 in direct ELISAs and Western blots. In direct ELISAs and Western blots, approximately 5% cross-reactivity with recombinant human (rh) FGF-4, rhFGF-5, rhFGF-6, rhFGF-7, rhFGF-9, rhFGF-10, rhFGF-17, rhFGF-18, rhFGF-19, rhFGF acidic, and rhFGF basic is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*E. coli*-derived recombinant human FGF-3 Asp28-Arg212 Accession # NP_005238
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

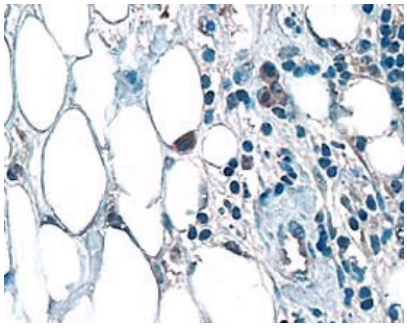
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Human FGF-3 (Catalog # 1206-F3)
Immunohistochemistry	5-15 µg/mL	See Below
Neutralization	Measured by its ability to neutralize FGF-3-induced proliferation in the NR6R-3T3 mouse fibroblast cell line. Rizzino, A. *et al.* (1988) Cancer Res. **48**:4266. The Neutralization Dose (ND_{50}) is typically 1-4 µg/mL in the presence of 0.3 µg/mL Recombinant Human FGF-3 and 1 µg/mL heparin.	

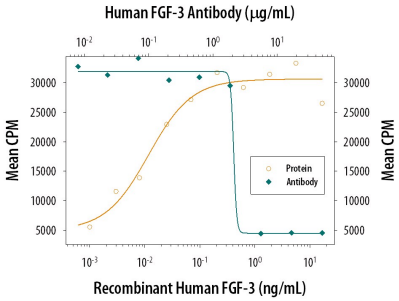
DATA

Immunohistochemistry



FGF-3 in Human Breast Cancer Tissue. FGF-3 was detected in immersion fixed paraffin-embedded sections of human breast cancer tissue using 10 µg/mL Goat Anti-Human FGF-3 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1206) overnight at 4 °C. Before incubation with the primary antibody tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained with the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Neutralization



Cell Proliferation Induced by FGF-3 and Neutralization by Human FGF-3 Antibody. Recombinant Human FGF-3 (Catalog # 1206-F3) stimulates proliferation in the the NR6R-3T3 mouse fibroblast cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Human FGF-3 (0.3 µg/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human FGF-3 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1206). The ND_{50} is typically 1-4 µg/mL in the presence of heparin (1 µg/mL).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

Fibroblast Growth Factor 3 (FGF-3) belongs to the large FGF family which has at least 23 members (1, 2). All FGF family members are heparin-binding growth factors with a core 120 amino acid (aa) FGF domain that allows for a common tertiary structure. FGFs are expressed during embryonic development and in restricted adult tissues. They act on cells of mesodermal and neuroectodermal origin to regulate diverse physiologic functions including angiogenesis, cell growth, pattern formation, embryonic development, metabolic regulation, cell migration, neurotrophic effects and tissue repair (3, 4). Signaling receptors for FGFs are type I transmembrane receptor tyrosine kinases belonging to the Ig superfamily. Four distinct but related classes of FGF receptors, FGF R1, 2, 3, and 4, exist. Through alternative splicing, multiple isoforms for FGF R1, 2 and 3, with distinct ligand recognition profiles, are also generated (4).

The *FGF-3* gene, originally designated *int-2*, was first identified as a proto-oncogene activated in mouse mammary tumors by proviral integration (2). Amplification of this gene has also been found frequently in human tumors. Human FGF-3 cDNA predicts a 239 aa precursor protein with a 17 aa signal peptide and a 222 aa secreted mature protein with one potential N-linked glycosylation site (1). Human and mouse FGF-3 share 88% aa sequence identity. The *Xenopus* and mammalian secreted FGF-3 are processed proteolytically at both the N- and C-terminus (5). FGF-3 binds with high-affinity to the IIIb isoforms of FGF R1 and FGF R2. FGF-3 also binds the IIIc isoform of FGF R2, but with lower affinity (6). FGF-3 has been implicated in the induction of inner ear development (7). Studies have suggested that FGF-3 and FGF-8 function synergistically in otic placode induction and during neuronal development to regulate dorsoventral axis formation (8-10). During development, the activities of FGF-3 and FGF-8 are regulated negatively by the sprouty family proteins and by Sef (similar expression to fgf genes), a transmebrane protein that shares intracellular sequence similarities with the IL-17 receptor (10).

References:

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