# Animal-Free™ Recombinant Human FGF acidic

Catalog Number: AFL232

## DESCRIPTION

| | |
|---|---|
| **Source** | *E. coli*-derived<br>Phe16-Asp155, with an N-terminal Met<br>Accession # NP_000791<br>Produced using non-animal reagents in an animal-free laboratory. |
| **N-terminal Sequence Analysis** | Met |
| **Predicted Molecular Mass** | 15.5 kDa |

## SPECIFICATIONS

| | |
|---|---|
| **Activity** | Measured in a cell proliferation assay using NR6R-3T3 mouse fibroblast cells. Rizzino, A. *et al.* (1988) Cancer Res. **48**:4266; Thomas, K. *et al.* (1987) Methods Enzymol. **147**:120.<br>The $ED_{50}$ for this effect is 0.1-0.3 ng/mL in the presence of 10 µg/mL of heparin. |
| **Endotoxin Level** | <0.01 EU per 1 µg of the protein by the LAL method. |
| **Purity** | >97%, by SDS-PAGE under reducing conditions and visualized by silver stain. |
| **Formulation** | Lyophilized from a 0.2 µm filtered solution in MOPS, $Na_2SO_4$ and EDTA. See Certificate of Analysis for details. |

## PREPARATION AND STORAGE

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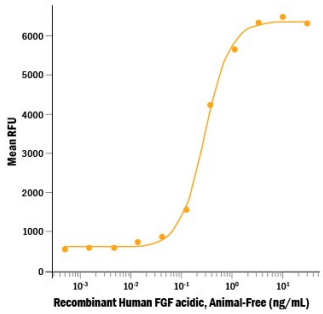
| **Reconstitution** | Reconstitute at 0.2 mg/mL in sterile PBS. |
| **Shipping** | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>● 12 months from date of receipt, -20 to -70 °C as supplied.<br>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>● 3 months, -20 to -70 °C under sterile conditions after reconstitution. |

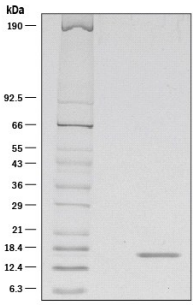
## DATA

### Bioactivity




Animal-Free™ Recombinant Human FGF acidic (Catalog # AFL232) stimulates cell proliferation in the NR6R-3T3 mouse fibroblast cell line. The $ED_{50}$ for this effect is 0.1-0.3 ng/mL in the presence of 10 µg/mL heparin.

### SDS-PAGE




1 µg/lane of Animal-Free™ Recombinant Human FGF acidic (Catalog # AFL232) was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 16 kDa.



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## BACKGROUND

FGF acidic, also known as FGF-1, ECGF, and HBGF-1, is a 17 kDa nonglycosylated member of the FGF family of mitogenic peptides. FGF acidic, which is produced by multiple cell types, stimulates the proliferation of all cells of mesodermal origin and many cells of neuroectodermal, ectodermal, and endodermal origin. It plays a number of roles in development, regeneration, and angiogenesis (1-3). Human FGF acidic shares 54% amino acid sequence identity with FGF basic and 17%-33% with other human FGFs. It shares 92%, 96%, 96%, and 96% aa sequence identity with bovine, mouse, porcine, and rat FGF acidic, respectively, and exhibits considerable species cross-reactivity. Alternate splicing generates a truncated isoform of human FGF acidic that consists of the N-terminal 40% of the molecule and functions as a receptor antagonist (4). During its nonclassical secretion, FGF acidic associates with S100A13, copper ions, and the C2A domain of synaptotagmin 1 (5). It is released extracellularly as a disulfide-linked homodimer and is stored in complex with extracellular heparan sulfate (6). The ability of heparan sulfate to bind FGF acidic is determined by its pattern of sulfation, and alterations in this pattern during embryogenesis thereby regulate FGF acidic bioactivity (7). The association of FGF acidic with heparan sulfate is a prerequisite for its subsequent interaction with FGF receptors (8, 9). Ligation triggers receptor dimerization, transphosphorylation, and internalization of receptor/FGF complexes (10). Internalized FGF acidic can translocate to the cytosol with the assistance of Hsp90 and then migrate to the nucleus by means of its two nuclear localization signals (11-13). The phosphorylation of FGF acidic by nuclear PKC delta triggers its active export to the cytosol where it is dephosphorylated and degraded (14, 15). Intracellular FGF acidic functions as a survival factor by inhibiting p53 activity and proapoptotic signaling (16).

**References:**

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## MANUFACTURING SPECIFICATIONS

Animal-Free Manufacturing Conditions

Our dedicated controlled-access animal-free laboratories ensure that at no point in production are the products exposed to potential contamination by animal components or byproducts. Every stage of manufacturing is conducted in compliance with R&D Systems' stringent Standard Operating Procedures (SOPs). Production and purification procedures use equipment and media that are confirmed animal-free.

Production

- All molecular biology procedures use animal-free media and dedicated labware.
- Dedicated fermentors are utilized in committed animal-free areas.

Purification

- Protein purification columns are animal-free.
- Bulk proteins are filtered using animal-free filters.
- Purified proteins are stored in animal-free containers in a dedicated cold storage room.

Quality Assurance

- Low Endotoxin Level.
- No impairment of biological activity.
- High quality product obtained under stringent conditions.
- For *ex vivo* research or bioproduction, **additional documentation** can be provided.

Please read our complete Animal-Free Statement



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