

Recombinant Rat FGF1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52409

Size: 10ug, 100ug

Protein Name: Fibroblast growth factor 1 (FGF-1) (Acidic fibroblast growth factor) (aFGF) (Heparin-binding growth factor 1) (HBGF-1)

Synonym: Fgf1, Fgf-1, Fgfa

UniProt ID: P61149

UniProt Link: www.uniprot.org/uniprotkb/P61149/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 155 AA

Molecular Weight: 17 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MAEGEITTF AAL TERFNLPLGNYKKPKLLYCSNGGHFLRILPDGTVDGTRDRSDQHIQLQLSAESAGE
VYIKGTETGQYLAMDTEGLLYGSQTPNEECLFLERLEENHYNTYTSKKHAEKNWVGLKKNNGSCKR
GPRTHYGQKAILFLPLVSSD

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Fibroblast growth factor 1 (FGF-1) (Acidic fibroblast growth factor) (aFGF) (Heparin-binding growth factor 1) (HBGF-1) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Plays an important role in the regulation of cell survival, cell division, angiogenesis, cell differentiation and cell migration. Functions as a potent mitogen in vitro. Acts as a ligand for FGFR1 and integrins. Binds to FGFR1 in the presence of heparin leading to FGFR1 dimerization and activation via sequential autophosphorylation on tyrosine residues which act as docking sites for interacting proteins, leading to the activation of several signaling cascades. Binds to integrin ITGAV:ITGB3. Its binding to integrin, subsequent ternary complex formation with integrin and FGFR1, and the recruitment of PTPN11 to the complex are essential for FGF1 signaling. Induces the phosphorylation and activation of FGFR1, FRS2, MAPK3/ERK1, MAPK1/ERK2 and AKT1. Can induce angiogenesis.

Subcellular Localization: Secreted . Cytoplasm . Cytoplasm, cell cortex . Cytoplasm, cytosol . Nucleus . Note=Lacks a cleavable signal sequence. Within the cytoplasm, it is transported to the cell membrane and then secreted by a non-classical pathway that requires Cu(2+) ions and S100A13. Secreted in a complex with SYT1 (By similarity). Binding of exogenous FGF1 to FGFR facilitates endocytosis followed by translocation of FGF1 across endosomal membrane into the cytosol. Nuclear import from the cytosol requires the classical nuclear import machinery, involving proteins KPNA1 and KPNB1, as well as LRRC59 (By similarity).

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.