Animal-Free™ Recombinant Human FGF-9

Catalog Number: Qk039

DESCRIPTION

Source	*E. coli*-derived human FGF-9 protein Accession # P31371.3
Predicted Molecular Mass	23 kDa

SPECIFICATIONS

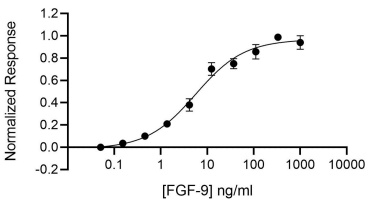
SDS-PAGE	Monomeric FGF-9 protein only
Activity	No significant difference between EC_{50} of reference and test lots
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Mycoplasma	Negative when tested in both ribosomal RNA hybridization and luminescence assays
Formulation	Lyophilized from HEPES/NaCl See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Resuspend in water at >100 µg/ml, prepare single use aliquots, add carrier protein if desired.
Shipping	The product is shipped lyophilized at ambient temperture, on ice blocks or dry ice. Shipping at ambient temperture does not affect the bioactivity or stability of the protein. Upon reciept, store immediately at the conditions stated below.
Stability & Storage	Store lyophilized protein between -20 and -80 °C until the date of expiry. Avoid freeze-thaw cycles.

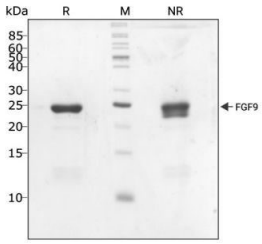
DATA

Bioactivity



Recombinant Human FGF-9, Animal-Free Protein Bioactivity
FGF-9 activity is determined using the Promega serum response element luciferase reporter assay (*) in transfected HEK293T cells. Cells are treated in triplicate with a serial dilution of FGF-9 for 3 hours. Firefly luciferase activity is measured and normalized to the control Renilla luciferase activity. EC_{50} = 5.7 ng/ml (0.25 nM).
*Promega pGL4.33[luc2P/SRE/Hygro] #E1340

SDS-PAGE



Recombinant Human FGF-9, Animal-Free Protein SDS-PAGE
FGF-9 protein migrates as a single band at 23 kDa in non-reducing (NR) conditions and upon reduction (R). No contaminating protein bands are visible. Purified recombinant protein (3 µg) was resolved using 15% w/v SDS-PAGE in reduced (+β-mercaptothanol, R) and non-reduced (NR) conditions and stained with Coomassie Brilliant Blue R250.

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BACKGROUND

Fibroblast growth factor 9 (FGF-9), also known as HBGF9 and GAF, is a member of the FGF family of secreted glycoproteins involved in mammalian skeleton morphogenesis and growth (1). The FGF family is characterized by a core heparin-binding FGF domain of approximately 120 amino acids (aa) that exhibits a beta -trefoil structure (2). Mature mouse FGF-9 shares 99% and 100% aa sequence identity with human and rat FGF-9, respectively. FGF-9, along with FGF-16 and -20, form a FGF subfamily that shares 65-71% aa sequence identity, binds FGFR3(IIIb), and are efficiently secreted despite having an uncleavable, bipartite signal sequence (2-4). In addition to FGFR3(IIIb), FGF-9 binding to the IIIc splice forms of FGFR-1, -2 and -3 have been reported (1,4,6). In the mouse embryo, the location and timing of FGF-9 expression affects development of the skeleton, cerebellum, lungs, heart, vasculature, digestive tract, and testes (2, 6-11). Deletion of mouse FGF-9 is lethal at birth due to lung hypoplasia, and causes rhizomelia, or shortening of the proximal skeleton (2,10,11). Additionally, a mutation in mouse FGF-9 is responsible for Elbow knee synostosis (Eks), which causes joint fusions in the elbow and knee (6). In humans, FGF9 mutations that lower receptor binding can result multiple synostoses syndrome (SYNS) (7). Altered FGF-9 expression or function is reported in human colon, endometrial, and ovarian cancers, correlating with progression, invasiveness, and survival (12-15).

References:

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PRODUCT SPECIFIC NOTICES

The above product was manufactured, tested and released by R&D System's contract manufacturer, Qkine Ltd, at 1 Murdoch House, Cambridge, UK, CB5 8HW. The product is for research use only and not for the diagnostic or theraputic use.

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