

DESCRIPTION

Source *E. coli*-derived
Gln23-Arg204, with an N-terminal Met
Accession # NP_149355

N-terminal Sequence Analysis Met

Predicted Molecular Mass 21 kDa

SPECIFICATIONS

Activity Measured in a cell proliferation assay using NR6R-3T3 mouse fibroblast cells. Raines, E.W. *et al.* (1985) *Methods Enzymol.* **109**:749. The ED₅₀ for this effect is typically 0.4-2 µg/mL in the presence of 10 µg/mL heparin.

Endotoxin Level <0.01 EU per 1 µg of the protein by the LAL method.

Purity >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

Formulation Lyophilized from a 0.2 µm filtered solution in MOPS, Na₂SO₄, EDTA and DTT. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 500 µg/mL in sterile PBS.

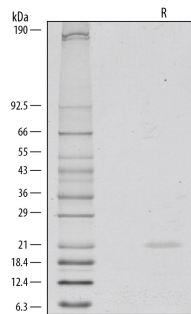
Shipping The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.

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.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

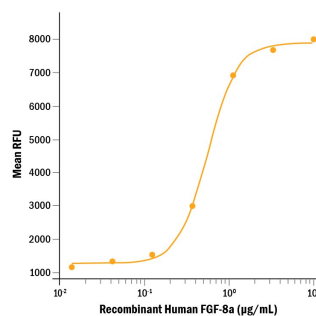
DATA

SDS-PAGE



1 µg/lane of Recombinant Human FGF-8a was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 22 kDa.

Bioactivity



Recombinant Human FGF-8a (Catalog # 4745-F8) stimulates cell proliferation of the NR6R-3T3 mouse fibroblast cell line. The ED₅₀ for this effect is typically 0.4-2 µg/mL in the presence of 10 µg/mL heparin.

BACKGROUND

FGF-8 is a member of the fibroblast growth factor family that was originally discovered as a growth factor essential for the androgen-dependent growth of mouse mammary carcinoma cells (1-4). Alternate splicing of mouse FGF-8 mRNA generates eight secreted isoforms, designated a-h. Only FGF-8a, b, e and f exist in humans (4). FGF-8 contains a 22 amino acid (aa) signal sequence, an N-terminal domain that varies according to the isoform (20 aa for FGF-8a, which is the shortest), a 125 aa FGF domain and a 37 aa proline-rich C-terminal sequence. The FGF domain of FGF-8 shares the most aa identity with FGF17 (75%) and FGF-18 (67%), and the three form an FGF subfamily (2). Human FGF-8a shares 100% aa identity with mouse, rat and bovine FGF-8a, and 99%, 83%, 83% and 78% aa identity with canine, *Xenopus*, chicken and zebrafish FGF-8a, respectively. FGF-8 is widely expressed during embryogenesis, and mediates epithelial-mesenchymal transitions. It plays an organizing and inducing role during gastrulation, and regulates patterning of the midbrain/hindbrain, eye, ear, limbs and heart in the embryo (2, 5-8). The isoforms may play different roles in development. For example, FGF-8a expands the midbrain in transgenic mice, while FGF-8b transforms midbrain into cerebellum (5). FGF-8 activates the 'c' splice forms of fibroblast growth factor receptors FGF R2, FGF R3, and FGF R4, with differential activity among the FGF-8 isoforms (2, 9). FGF-8b shows the strongest receptor affinity and oncogenic transforming capacity, although FGF-8a and e are also transforming and have been found in human prostate, breast or ovarian tumors (1, 5, 10 - 13). FGF-8 shows limited expression in the normal adult, but low levels are found in the reproductive and genitourinary tract, peripheral leukocytes and bone marrow hematopoietic cells (3, 10, 14).

References:

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