Miltenyi Biotec

Human FGF-8b
research grade

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1. Description

Products Human FGF-8b, research grade.

Recombinant human fibroblast growth factor 8b.

Content in µg	Order no.
10	130-095-731
25	130-095-733

Biological activity The ED_{50} is ≤200 ng/mL corresponding to an activity of $\geq 5 \times 10^3$ U/mg.

▲ **Note:** The ED_{50} is determined by proliferation assay in the presence of sodium heparin using 3T3 cells.

Primary structure Single non-glycosylated polypeptide chain (194 amino acid residues including an N-terminal methionine).

Molecular mass 22.5 kDa.

Source Produced in *E. coli*.

Product format Lyophilized from a filtered (0.2 µm) buffer solution.

Stabilizer Mannitol and trehalose.

Purity >95% as determined by SDS-PAGE analysis.

Endotoxin level Low endotoxin (<1.0 EU/µg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.

Storage Lyophilized Human FGF-8b, research grade should be stored at –20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at –20 °C or below. Avoid repeated freeze-thaw cycles.

Reconstitution It is recommended to reconstitute lyophilized Human FGF-8b, research grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 100 µL. Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline.

1.1 Background information

Fibroblast growth factor 8 (FGF-8), originally identified as androgen-induced growth factor, is a heparin-binding protein, which has mitogenic and transforming activity. Eight secreted FGF-8 isoforms (FGF-8a to h) have been identified in mice, whereas four have been described in humans (a, b, e, and f). FGF-8b appears to be the predominant form and has been shown to have the most important oncogenic transforming capacity. FGF-8 exerts a pivotal role in embryogenesis. It is expressed during gastrulation and influences brain, limb, heart and facial development in the mouse embryo. In addition, FGF-8 was shown to stimulate osteoblast proliferation. The amino acid sequence of human FGF8-b shares 100% identity with mouse FGF-8b.

1.2 Applications

Human FGF-8b can be used for a variety of applications, including:

- Differentiation of embryonic stem cells into neutral progenitor cells.
- Differentiation of embryonic stem cell-derived neural progenitor cells into dopaminergic neurons.
- Survival of neural precursor cells and differentiation into astroglial cells.
- Stimulation of osteoblast proliferation.
- Proliferation of endothelial cells.
- Proliferation of myogenic cells.
- Tumor growth studies of prostate and breast cancer.
- Protection of hippocampal cultures from oxidative stress.

Optimal concentration for a specific application should be determined by a dose-response experiment.

2. References

1. Truong, D.-J. J. *et al.* (2021) Non-invasive and high-throughput interrogation of exon-specific isoform expression. Nat. Cell Biol. 23 (6): 652–663.
2. Überbacher, C. *et al.* (2019) Application of CRISPR/Cas9 editing and digital droplet PCR in human iPSCs to generate novel knock-in reporter lines to visualize dopaminergic neurons. Stem Cell Res. 41: 101656.

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