Miltenyi Biotec

Human FGF-2 IS
research grade

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1. Description

Products

Human FGF-2 IS, research grade.

Recombinant human fibroblast growth factor 2 IS (improved sequence).

Content in µg	Order no.
10	130-104-925
50	130-104-921

Biological activity

The ED_{50} is ≤1 ng/mL corresponding to an activity of ≥1×10^6 IU/mg.

▲ **Note:** The ED_{50} is determined by proliferation assay using 3T3 cells according to Robinson and Gaines-Das.[1] The proliferation assay was calibrated with the international standard for human FGF-2 (NIBSC code 90/712) provided by the WHO/National Institute for Biological Standards and Control.

Primary structure

Single non-glycosylated polypeptide chain without N-terminal methionine (146 amino acid residues) and proprietary amino acid substitutions.

Molecular mass

16.3 kDa.

Source

Produced in *E. coli*.

Product format

Lyophilized from a filtered (0.2 µm) buffer solution.

Stabilizer

Mannitol and trehalose.

Purity

>97% 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-2 IS, 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-2 IS, 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 2 (FGF-2), also termed fibroblast growth factor basic (FGF-b) or basic FGF (bFGF), belongs to the FGF family. It functions as a wide-spectrum mitogenic, angiogenic, and neurotrophic factor and stimulates the proliferation of a wide variety of cells including mesenchymal, neuroectodermal, and endothelial cells. FGF-2 has been implicated in a multitude of physiological and pathological processes, including limb development, angiogenesis, wound healing, and tumor growth. Human FGF-2 IS is an engineered FGF-2 variant with increased thermostability and higher resistance to proteases, and retains the same biological properties as naturally occurring FGF-2.

1.2 Applications

Human FGF-2 can be used for a variety of applications, including:

- Stimulation of proliferation and differentiation of several cell types, such as mesenchymal stromal cells, neural cells, and endothelial cells.
- Long-term maintenance and propagation of undifferentiated embryonic and induced pluripotent stem cells.
- Differentiation of neural cells starting from embryonic and induced pluripotent stem cell cultures.

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

2. References

1. Robinson, C. J. and Gaines-Das, R. (1994) The international standard for basic fibroblast growth factor (FGF-2); comparison of candidate preparations by *in vitro* bioassays and immunoassays. Growth Factors 11: 9–16.

Refer to www.miltenyibiotec.com for all data sheets and protocols. Miltenyi Biotec provides technical support worldwide. Visit www.miltenyibiotec.com for local Miltenyi Biotec Technical Support contact information.

This product is covered by patent nos. US10,336,799 and EP2930181B1.

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