Miltenyi Biotec

Human Noggin
research grade

Contents

1. Description
   - 1.1 Background information
   - 1.2 Applications

1. Description

Products Human Noggin, research grade.

Recombinant human noggin.

Content in µg	Order no.
10	130-138-912
100	130-138-914
1000	130-138-904

Biological activity The ED_{50} is ≤15 ng/mL corresponding to an activity of $\geq 6.7 \times 10^4$ U/mg.

▲ **Note:** The ED_{50} is determined by the ability to inhibit BMP-4 induced alkaline phosphatase production by ATDC5 chondrogenic cells.

Primary structure Two identical disulfide-linked glycosylated polypeptide chains (205 amino acid residues each).

Molecular mass 46.1 kDa (dimer, calculated).

Source Produced in HEK293 cells.

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

Stabilizer None.

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 Noggin, 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 Noggin, research grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 20 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

Noggin is a disulfide-linked homodimer that acts by binding members of the TGF-β family, and consequently blocks their ability to signal through their receptors. Noggin plays a crucial role in regulating developmental processes by inhibiting the signaling pathway of bone morphogenetic protein 4 (BMP-4), as well as other BMPs. During embryogenesis Noggin is produced by the dorsal mesoderm and is important for the correct bone morphology and neural tissue formation. Mutations in the Noggin-coding gene (NOG) are associated with several bone diseases. The sequence of Noggin protein shows high homology across several species.

1.2 Applications

Human Noggin can be used for a variety of applications, including:

- ES/ iPS differentiation into neural stem cells and retinal cells.
- Differentiation of human ES and iPS cell-derived endodermal lineages.
- Induction of adipogenic differentiation of MSCs.

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

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Miltenyi Biotec B.V. & Co. KG
Friedrich-Ebert-Straße 68, 51429 Bergisch Gladbach, Germany
Phone +49 2204 8306-0, Fax +49 2204 85197
macsde@miltenyi.com
www.miltenyibiotec.com

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