Cytokines

Human Recombinant BMP-2

Bone morphogenetic protein 2

Catalog # 78004 50 μg
78004.1 100 μg
78004.2 1000 μg

Product Description

Bone morphogenetic protein 2 (BMP-2) is a member of the transforming growth factor beta (TGF-β) superfamily. BMP-2 is a disulfide-linked homodimer, acts as a ligand for complexes of type I and II BMP receptors, and primarily activates SMAD1/5/8 signaling (Nohe et al.). BMP-2 is a potent differentiation factor and directs human pluripotent stem cells (hPSCs) towards various cell types including extra-embryonic endoderm, mesenchymal cells, and chondrocytes (Pera et al.). Although BMP-2 expression is low in healthy cartilage, its expression is upregulated at the site of cartilage damage (Blaney Davidson et al.), and in vitro BMP-2 induces bone and cartilage formation and is able to induce chondrogenesis in human mesenchymal stem cells (Schmitt et al.).

Product Information

Alternative Names: BDA2, BMP-2A, BMP2, Bone morphogenetic protein 2A
Accession Number: P12643
Amino Acid Sequence: MQAKHKQRKR LKSSCKRHPL YVDFSDVGWN DWIVAPPGYH AFYCHGECPF PLADHLNSTN HAIVQTLVNS VNSKIPKACC VPTELSAISM LYLDENEKVV LKNYQDMVVE GCGCR
Predicted Molecular Mass: 26 kDa
Species: Human
Cross Reactivity: Mouse, Rat, Monkey
Formulation: Lyophilized after dialysis against acetic acid.
Source: E. coli

Specifications

Activity: The specific activity is $\geq 5 \times 10^3$ units/mg (EC50 $\leq 0.2$ μg/mL) as determined by the alkaline phosphatase activity induced in ATDC-5 cells.
Purity: $\geq 95%$
Endotoxin Level: Measured by kinetic limulus amebocyte lysate (LAL) analysis and is $\leq 0.2$ EU/μg protein.

Preparation and Storage

Storage: Store at -80°C.
Stability: Stable as supplied for 12 months from date of receipt.
Reconstitution: Centrifuge vial before opening. Resuspend the product in sterile 20 mM acetic acid or 5 mM hydrochloric acid to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 2 weeks or at -20°C to -80°C for up to 3 months. Avoid repeated freeze-thaw cycles.
(A) The biological activity of Human Recombinant BMP-2 was tested by its ability to promote alkaline phosphatase production of ATDC-5 cells. Alkaline phosphatase production was measured using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which alkaline phosphatase production is at 50% of maximum. The EC50 in the above example is 0.09 ng/mL.

(B) 2 μg of Human Recombinant BMP-2 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant BMP-2 has a predicted molecular mass of 26 kDa.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, please visit our website at www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References


