

DESCRIPTION

Source Chinese Hamster Ovary cell line, CHO-derived
Ser372-His510
Accession # P20722

N-terminal Sequence Analysis Ser372

Structure / Form Disulfide-linked homodimer

Predicted Molecular Mass 15.5 kDa

SPECIFICATIONS

SDS-PAGE 18 kDa, reducing conditions

Activity Measured by its ability to induce alkaline phosphatase production by ATDC5 mouse chondrogenic cells. Nakamura, K. *et al.* (1999) *Exp. Cell Res.* **250**:351.
The ED₅₀ for this effect is typically 0.1-0.4 µg/mL.

Endotoxin Level <1.0 EU per 1 µg of the protein by the LAL method.

Purity >95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 µm filtered solution in HCl with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 200 µg/mL in 4 mM HCl containing at least 0.1% human or bovine serum albumin.

Shipping The product is shipped at ambient temperature. 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.

BACKGROUND

Bone Morphogenetic Protein 6 (BMP-6), also known as Vgr-1, is one of at least 15 structurally and functionally related BMPs which are members of the transforming growth factor β (TGF-β) superfamily. Mouse BMP-6 is synthesized as a 510 amino acid (aa) precursor protein that is cleaved at the dibasic cleavage site (RxxR) to release the 18 kDa C-terminal mature protein. Biologically active BMP-6 consists of a disulfide-linked homodimer of the mature proteins (1, 2). Mature mouse BMP-6 shares 96% and 98% aa sequence identity with human and rat BMP-6, respectively. Cellular responses to BMP-6 are mediated by hetero-oligomeric complexes of type I (Activin RIA/ALK-2 and BMPR-IA/ALK-3) and type II (Activin RIIA and BMPR-II) serine/threonine kinase receptors (3 - 5). Glycosylation of BMP-6 is required for its interaction with Activin RIA (6). BMP-6 induces the expression of Noggin and is subsequently antagonized by Noggin (7, 8). BMP-6 induces a wide range of cellular responses. It promotes osteoblast differentiation from mesenchymal stem cells (5), chondrocyte maturation (9), Ang II-induced aldosterone production in the adrenal cortex (3), hormone production and responsiveness in ovarian granulosa cells (10), iNOS and TNF-α production in macrophages (4), the cell death of B cells (8), and neurite outgrowth (11). BMP-6 expression is induced in astrocytes surrounding sites of brain injury where it functions as a neuroprotectant (11, 12). BMP-6 is upregulated during prostate cancer progression and promotes tumor cell metastasis to bone (13). Through interactions with the BMP coreceptor RGM-C/Hemojuvelin, BMP-6 plays an important role in iron homeostasis by promoting Hcpidin expression and preventing serum iron overload (14, 15).

References:

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