

DESCRIPTION

Source	<i>E. coli</i> -derived Thr335-Arg454 Accession # P43028
N-terminal Sequence Analysis	Thr335
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	13.7 kDa (monomer)

SPECIFICATIONS

Activity	Measured by its ability to induce alkaline phosphatase production by ATDC5 mouse chondrogenic cells. Nakamura, K. <i>et al.</i> (1999) <i>Exp. Cell Res.</i> 250 :351. The ED ₅₀ for this effect is typically 0.85-5 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in Acetonitrile and TFA. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 300 µg/mL in sterile 4 mM HCl.
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. <ul style="list-style-type: none"> ● 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

Growth Differentiation Factor 6 (GDF-6), also known as bone morphogenetic protein 13 (BMP-13) or cartilage-derived morphogenetic protein 2 (CDMP-2), is a member of the bone morphogenetic protein (BMP) family which belongs to the transforming growth factor β (TGF-β) superfamily. The mature GDF-6 with 120 amino acids is a homodimeric protein containing the characteristic seven conserved cysteine residues. GDF-5, GDF-6 and GDF-7, which share 80-86% identity, define a new subgroup within the BMP family. Like other TGF-β superfamily proteins, GDF-6 is highly conserved across species. At the amino acid sequence level, human and mouse GDF-6 are 99% identical. It has been reported that GDF-6 has multiple functions including regulation of myogenesis, regulation of chondrogenesis, bone morphogenesis, and neuron differentiation and survival. GDF-6 response is mediated by the formation of hetero-oligomeric complexes of type I (BMPRII) and type II (BMPRI or Activin R-II) serine/threonine kinase receptors, and the activation of Smad proteins (Smad 1, 5, and 8).

References:

1. Storm, E.E. *et al.* (1994) *Nature* **368**:639.
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3. Francis-West, P.H. *et al.* (1999) *Development* **126**:1035.
4. Massague, J. *et al.* (2000) *Genes and Dev.* **14**:627.
5. Inada, M. *et al.* (1996) *BBRC*, **222**:317.
6. Settle, S.H., Jr. *et al.* (2003) *Dev. Biol.* **254**:116.