

DESCRIPTION

Source *E. coli*-derived
Ala264-His402 & Val265-His402
Accession # AAP74559

N-terminal Sequence Analysis Ala264 & Val265

Structure / Form Disulfide-linked homodimer

Predicted Molecular Mass 15.8 kDa (monomer)

SPECIFICATIONS

Activity Measured by its binding ability in a functional ELISA.
When Recombinant Human BMP-8a is present at 1 µg/mL, the concentration of recombinant human BMPR-1A Fc Chimera that produces 50% of the optimal binding response is approximately 1.5-6 µg/mL.

Endotoxin Level <0.10 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 Acetonitrile and TFA. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 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.**

- 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

BMP-8, also known as osteogenic protein 2 (OP-2), was first isolated from a hippocampal library in a screen to identify relatives of BMP-7 (OP-1) (1). BMPs are a family of structurally and functionally related proteins and represent a subfamily of the transforming growth factor β (TGF-β) superfamily. BMPs were originally identified as protein regulators of cartilage and bone formation. They have since been shown to be involved in embryogenesis and morphogenesis of various tissues and organs (2). BMPs play roles in regulating growth, differentiation, chemotaxis, and apoptosis of various cell types, including mesenchymal, epithelial, hematopoietic, and neuronal cells.

There exist two highly related and closely linked genes, designated BMP-8a and -8b in mice and humans. For humans, the protein products of these two genes share 98% amino acid (aa) sequence identity in their pro- and mature regions. However in the mouse, the two proteins share 89% and 76% aa sequence homology in their pro- and mature regions, respectively (3). Mature human BMP-8a shares 91% and 70% aa sequence identity with mouse BMP-8a and -8b, respectively. Human BMP-8a is synthesized as a large precursor protein that is cleaved at a dibasic cleavage site (RTPR) between aa residues 263 and 264 to release a 139 aa carboxy-terminal domain. Expression patterns of the BMP-8 genes indicate that they regulate aspects of cell proliferation and/or differentiation during spermatogenesis and formation of the placenta (3). BMP-8 is also highly expressed in osteosarcomas (4).

References:

1. Ozkaynak, E. *et al.* (1992) *J. Biol. Chem.* **267**:25220.
2. Canalis, E. *et al.* (2003) *Endocrine Rev.* **24**:218.
3. Zhao, G-Q. *et al.* (1996) *Mech. Dev.* **57**:159.
4. Sulzbacher, I. *et al.* (2002) *J. Clin. Pathol.* **55**:381.