

## DESCRIPTION

**Source** Chinese Hamster Ovary cell line, CHO-derived  
Ala264-His402  
Accession # AAP74559

**N-terminal Sequence Analysis** Ala264

**Structure / Form** Disulfide-linked homodimer by SDS-PAGE under non-reducing conditions

**Predicted Molecular Mass** 15.7 kDa (monomer)

## SPECIFICATIONS

**SDS-PAGE** 19 kDa, reducing conditions

**Activity** Measured by its ability to inhibit the cell growth of DU145 human prostate carcinoma cells. Miyazaki, H. *et al.* (2004) *Oncogene* **23**:9326. The ED<sub>50</sub> for this effect is 0.5-5 µg/mL.

**Endotoxin Level** <0.01 EU per 1 µg of the protein by the LAL method.

**Purity** >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

**Formulation** Lyophilized from a 0.2 µm filtered solution in HCl. See Certificate of Analysis for details.

## PREPARATION AND STORAGE

**Reconstitution** Reconstitute at 250 µg/mL in 4 mM HCl.

**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage**

- 12 months from date of receipt, ≤ -20 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, ≤ -20 °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 are involved in a wide range of processes including embryogenesis, tissue morphogenesis, cell differentiation and migration, and tumorigenesis. Cellular responses to BMPs are mediated by hetero-oligomeric complexes of type I and type II serine/threonine kinase receptors (2 - 4). BMP-8a and BMP-8b, produced from separate genes, share 98% aa sequence identity in human but only 74% in mouse within the mature regions. Human BMP-8a is synthesized as a 402 aa precursor protein that is cleaved between Arg263 and Ala264 to release the C-terminal mature protein. Mature human BMP-8a shares 90% and 68% aa sequence identity with mouse mature BMP-8a and -8b, respectively. BMP-8a is expressed during pregnancy in the deciduum and trophoblast cells, by inner root sheath cells of developing hair follicles, and by the epididymis and spermatids (5 - 7). In the mouse it cooperates with BMP-7 in the maintenance of spermatogenesis but is not required for the initiation of spermatogenesis (7, 8). BMP-8b, in contrast, is required for both the initiation and maintenance of spermatogenesis (9). BMP-8a is induced during osteoblast differentiation at the onset of mineralization and during the osteogenic phase of bone repair in osteoblasts and osteocytes (10 - 12). BMP-8a/b is also highly expressed in osteosarcomas (13).

## References:

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