

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human BMP-8 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant human BMP-2, -3, -4, -5, -6, or -7 is observed.
Source	Monoclonal Mouse IgG _{2B} Clone # 158708
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human BMP-8 Ala264-His402 Accession # AAP74559
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Western Blot	1 µg/mL	Recombinant Human BMP-8

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
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. ● 6 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 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:

1. Ozkaynak, E. *et al.* (1992) *J. Biol. Chem.* **267**:25220.
2. Chen, D. *et al.* (2004) *Growth Factors* **22**:233.
3. Bragdon, B. *et al.* (2011) *Cell Signal.* **23**:609.
4. Singh, A. and R.J. Morris (2010) *Cytokine Growth Factor Rev.* **21**:299.
5. Zhao, G.-Q. and B.L. Hogan (1996) *Mech. Dev.* **57**:159.
6. Ying, Y. and G.-Q. Zhao (2000) *Biol. Reprod.* **63**:1781.
7. Zhao, G.-Q. *et al.* (1998) *Development* **125**:1103.
8. Zhao, G.-Q. *et al.* (2001) *Dev. Biol.* **240**:212.
9. Zhao, G.-Q. *et al.* (1998) *Genes Dev.* **10**:1657.
10. van der Horst, G. *et al.* (2002) *Bone* **31**:661.
11. Cho, T.-J. *et al.* (2002) *J. Bone Miner. Res.* **17**:513.
12. Paic, F. *et al.* (2009) *Bone* **45**:682.
13. Sulzbacher, I. *et al.* (2002) *J. Clin. Pathol.* **55**:381.