

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human BMP-3b/GDF-10 in direct ELISAs and Western blots. In direct ELISAs, approximately 25% cross-reactivity with recombinant human (rh) BMP-3 is observed and less than 1% cross-reactivity with rhBMP-2, rhBMP-4, rhBMP-5, rhBMP-6, and rhBMP-7 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant human BMP-3b/GDF-10 Gln369-Arg478 Accession # Q5VSQ8
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	0.1 µg/mL	Recombinant Human BMP-3b/GDF-10 (Catalog # 1543-BP)
Immunohistochemistry	5-15 µg/mL	Immersion fixed paraffin-embedded sections of human prostate cancer tissue

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 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	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <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-3b, also known as GDF-10, belongs to the transforming growth factor β (TGF- β) superfamily which includes the TGF- β s, bone morphogenetic proteins (BMPs), growth differentiation factors (GDFs), Activins, Inhibins, Leftys, Nodal, Mullerian inhibitory substance (MIS) and the glial cell line-derived neurotrophic factors (GDNFs) (1). TGF- β family members are synthesized and secreted as homodimeric or heterodimeric prepropeptides that are cleaved by proprotein convertases such as furin to generate the carboxy-terminal mature dimeric protein that contains the characteristic conserved cysteine residues involved in the formation of the cysteine knot domain. Within pro-BMP-3b, three dibasic cleavage sites have been identified. Mature BMP-3B is a disulfide-linked homodimer of the C-terminal 110 amino acids. Among TGF- β family members, BMP-3b is most closely related to BMP-3, sharing 83% and 30% amino acid sequence identity in their mature and pro regions, respectively (2, 3). BMP-3b is highly conserved across animal species, the aa sequence of mature human BMP-3b is 98% identical with that of the mouse or rat proteins (2, 3). BMP-3b is expressed in developing skeletal structures of the craniofacial region and the vertebral column, as well as in the adult trachea, aorta, and most abundantly in the cerebellum and uterus (2-4). Interestingly, in the knock-out mice, no obvious abnormalities have been found in these tissues (4). The biological function of BMP-3b is yet unknown, however studies have implicated it in the differentiation of osteoblasts, augmenting BMP-2 activity (5, 6).

References:

1. Miyazono, K. *et al.* (2001) *J. Cell Physiol.* **187**:265.
2. Cunningham, N.S. *et al.* (1995) *Growth Factors* **12**:99.
3. Takao, M. *et al.* (1996) *Biochem. Biophys. Res. Comm.* **219**:656.
4. Zhao, R. *et al.* (1999) *Dev. Biol.* **212**:68.
5. Hino, J. *et al.* (1999) *Biochem. Biophys. Res. Comm.* **256**:419.
6. Kaihara, S. *et al.* (2003) *Life Sci.* **72**:1683.