

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human BMP-1/PCP direct ELISAs and Western blots. In direct ELISAs, approximately 10% cross-reactivity with recombinant human (rh) TLL-2 is observed, and less than 1% cross-reactivity with rhBMP-2, -3, -3b, -4, -5, -6, -7, -8, -9, -10, and -15 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human BMP-1/PCP Ala121-Gln730 Accession # NP_001190
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 either lyophilized or 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	See Below
Immunocytochemistry	5-15 µg/mL	Immersion fixed U2OS human osteosarcoma cell line
Immunoprecipitation	25 µg/mL	Conditioned cell culture medium spiked with Recombinant Human BMP-1/PCP (Catalog # 1927-ZN), see our available Western blot detection antibodies

DATA

Western Blot

Detection of Recombinant Human BMP-1/PCP by Western Blot. Western blot shows 25 ng of Recombinant Human BMP-1/PCP (Catalog # 1927-ZN), Recombinant Human TLL-2, Recombinant Human/Mouse/Rat BMP-2 (Catalog # 355-BM), Recombinant Human BMP-3 (Catalog # 113-BP), Recombinant Human BMP-3b/GDF-10 (Catalog # 1543-BP), Recombinant Human BMP-4 (Catalog # 314-BP), Recombinant Human BMP-5 (Catalog # 615-BMC), Recombinant Human BMP-6 (Catalog # 507-BP), Recombinant Human BMP-7 (Catalog # 354-BP), Recombinant Human BMP-8a (Catalog # 1073-BP), Recombinant Human BMP-8b (Catalog # 9316-BP), Recombinant Human BMP-9 (Catalog # 3209-BP), Recombinant Human BMP-10 (Catalog # 2926-BP) and Recombinant Human BMP-15/GDF-9B (Catalog # 5096-BM). PVDF Membrane was probed with 0.1 µg/mL of Goat Anti-Human BMP-1/PCP Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1927) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). A specific band was detected for BMP-1/PCP at approximately 100 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 3.

Western Blot

Detection of Recombinant Human BMP-1/PCP by Western Blot. Western blot shows 25 ng of Recombinant Human BMP-1/PCP (Catalog # 1927-ZN), Recombinant Human TLL-2, Recombinant Human Meprin α Subunit/MEP1A (Catalog # 3220-ZN), Recombinant Human Meprin β Subunit/MEP1B (Catalog # 2895-ZN), Recombinant Human Ovastacin, Recombinant Human ADAM10 (Catalog # 936-AD), Recombinant Human ADAMTS4 (Catalog # 4307-AD), and Recombinant Human MMP-1 (Catalog # 901-MP). PVDF Membrane was probed with 0.1 µg/mL of Goat Anti-Human BMP-1/PCP Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1927) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). A specific band was detected for BMP-1/PCP at approximately 100 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 3.

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	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

Bone morphogenetic protein 1 (BMP-1), also known as procollagen C-proteinase (PCP), is a zinc protease of the astacin family (1, 2). BMP-1/PCP plays a key role in formation of extracellular matrix (ECM) by converting precursor proteins into their mature and functional forms. The precursor proteins identified as substrates for BMP-1/PCP include collagens, biglycan, laminin 5, dentin matrix protein-1, and lysyl oxidase (3). There are six alternatively spliced forms known to be derived from the BMP-1 gene, and isoform 1 consisting of residues 1 to 730 was expressed. The secreted and purified protein does not contain the signal peptide (amino acid residues 1-22) and pro domain (residues 23-120), but contain protease (residues 121-321), CUB I (residues 322-434), CUB II (residues 435-546), EGF-like (residues 547-588) and CUB III (residues 591-703) domains. The pro domain is apparently cleaved by a furin-like proprotein convertase (4). The purified BMP-1/PCP is an active protease and its peptidase activity can be determined as described above. The purified BMP-1/PCP is predicted to possess procollagen C-proteinase activity because it contains the minimal domain structure required (5).

References:

1. Wozney, J.M. *et al.* (1988) *Science* **242**:1528.
2. Bond, J.S. and R.J. Beynon (1995) *Protein Sci.* **4**:1247.
3. Steiglitz, B.M. *et al.* (2004) *J. Biol. Chem.* **279**:980.
4. Leighton, M. and K.E. Kadler (2003) *J. Biol. Chem.* **278**:18478.
5. Hartigan, N. *et al.* (2003) *J. Biol. Chem.* **278**:18045.