

DESCRIPTION

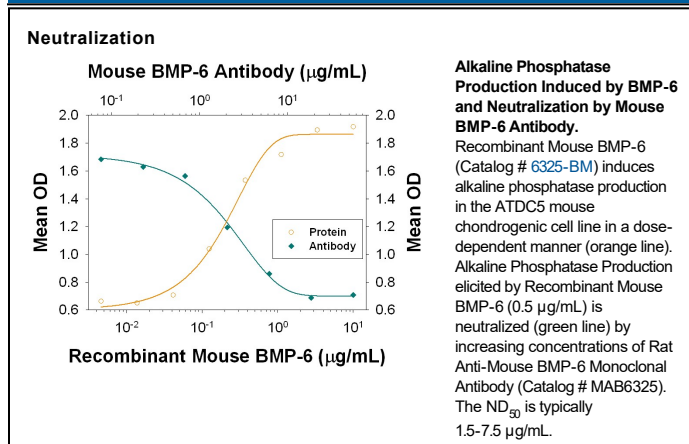
Species Reactivity	Mouse
Specificity	Detects mouse BMP-6 in ELISAs.
Source	Monoclonal Rat IgG _{2B} Clone # 719040
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant mouse BMP-6 Met1-His510 Accession # P20722
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
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.

Neutralization	Measured by its ability to neutralize BMP-6-induced alkaline phosphatase production in the ATDC5 mouse chondrogenic cell line. Asahina, I. <i>et al.</i> (1996) <i>Exp. Cell Res.</i> 222 :38. The Neutralization Dose (ND ₅₀) is typically 1.5-7.5 µg/mL in the presence of 0.5 µg/mL Recombinant Mouse BMP-6.
-----------------------	--

DATA



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

Bone Morphogenetic Protein 6 (BMP-6), also known as Vgr-1, is one of at least 15 structurally and functionally related BMPs which are members of the transforming growth factor β (TGF- β) superfamily. Mouse BMP-6 is synthesized as a 510 amino acid (aa) precursor protein that is cleaved at the dibasic cleavage site (RxxR) to release the 18 kDa C-terminal mature protein. Biologically active BMP-6 consists of a disulfide-linked homodimer of the mature proteins (1, 2). Mature mouse BMP-6 shares 96% and 98% aa sequence identity with human and rat BMP-6, respectively. Cellular responses to BMP-6 are mediated by hetero-oligomeric complexes of type I (Activin RIA/ALK-2 and BMPRI-IA/ALK-3) and type II (Activin RIIA and BMPRII) serine/threonine kinase receptors (3-5). Glycosylation of BMP-6 is required for its interaction with Activin RIA (6). BMP-6 induces the expression of Noggin and is subsequently antagonized by Noggin (7, 8). BMP-6 induces a wide range of cellular responses. It promotes osteoblast differentiation from mesenchymal stem cells (5), chondrocyte maturation (9), Ang II-induced aldosterone production in the adrenal cortex (3), hormone production and responsiveness in ovarian granulosa cells (10), iNOS and TNF- α production in macrophages (4), the cell death of B cells (8), and neurite outgrowth (11). BMP-6 expression is induced in astrocytes surrounding sites of brain injury where it functions as a neuroprotectant (11, 12). BMP-6 is upregulated during prostate cancer progression and promotes tumor cell metastasis to bone (13). Through interactions with the BMP coreceptor RGM-C/Hemojuvelin, BMP-6 plays an important role in iron homeostasis by promoting Hpcidin expression and preventing serum iron overload (14, 15).

References:

1. Chen, D. *et al.* (2004) *Growth Factors* **22**:233.
2. Lyons, K. *et al.* (1989) *Proc. Natl. Acad. Sci.* **86**:4554.
3. Inagaki, K. *et al.* (2006) *Endocrinology* **147**:2681.
4. Hong, J.H. *et al.* (2008) *Immunology* **128**:e442.
5. Lavery, K. *et al.* (2008) *J. Biol. Chem.* **283**:20948.
6. Saremba, S. *et al.* (2008) *FEBS J.* **275**:172.
7. Haudenschild, D.R. *et al.* (2004) *Cancer Res.* **64**:8276.
8. Kersten, C. *et al.* (2005) *BMC Immunol.* **6**:9.
9. Grimsrud, C.D. *et al.* (1999) *J. Bone Miner. Res.* **14**:475.
10. Shi, J. *et al.* (2009) *Fertil. Steril.* **92**:1794.
11. Yabe, T. *et al.* (2002) *J. Neurosci. Res.* **68**:161.
12. Zhang, Z. *et al.* (2006) *Neuroscience* **138**:47.
13. Dai, J. *et al.* (2005) *Cancer Res.* **65**:8274.
14. Meynard, D. *et al.* (2009) *Nat. Genet.* **41**:478.
15. Andriopoulos, B. Jr. *et al.* (2009) *Nat. Genet.* **41**:482.