

BMP-2 (h2): 293 Lysate: sc-128103

BACKGROUND

BMP-2 (bone morphogenetic protein 2), also known as BMP-2A (bone morphogenetic protein 2A), is a 396 amino acid secreted protein that belongs to the TGF- β family. As a disulfide-linked homodimer that induces cartilage and bone formation, BMP-2 interacts with SOSTDC1, gremlin-2, Asporin, RGMa, RGMb and RGMc. BMP-2 is highly expressed in lung, spleen and colon, with low levels of expression in heart, brain, placenta, liver, skeletal muscle, kidney, pancreas, prostate, ovary and small intestine. The gene that encodes BMP-2 maps to human chromosome 20p12.3. Comprising approximately 2% of the human genome, chromosome 20 contains nearly 63 million bases that encode over 600 genes, some of which are associated with Creutzfeldt-Jakob disease, amyotrophic lateral sclerosis, spinal muscular atrophy, ring chromosome 20 epilepsy syndrome and Alagille syndrome.

REFERENCES

1. Scheufler, C., Sebald, W. and Hülsmeier, M. 1999. Crystal structure of human bone morphogenetic protein-2 at 2.7 Å resolution. *J. Mol. Biol.* 287: 103-115.
2. Yanagita, M., Oka, M., Watabe, T., Iguchi, H., Niida, A., Takahashi, S., Akiyama, T., Miyazono, K., Yanagisawa, M. and Sakurai, T. 2004. USAG-1: a bone morphogenetic protein antagonist abundantly expressed in the kidney. *Biochem. Biophys. Res. Commun.* 316: 490-500.
3. Heng, S., Paule, S., Hardman, B., Li, Y., Singh, H., Rainczuk, A., Stephens, A.N. and Nie, G. 2010. Posttranslational activation of bone morphogenetic protein 2 is mediated by proprotein convertase 6 during decidualization for pregnancy establishment. *Endocrinology* 151: 3909-3917.
4. Kim, H.N., Min, W.K., Jeong, J.H., Kim, S.G., Kim, J.R., Kim, S.Y., Choi, J.Y. and Park, B.C. 2011. Combination of Runx2 and BMP2 increases conversion of human ligamentum flavum cells into osteoblastic cells. *BMB Rep.* 44: 446-451.
5. Liberman, M., Johnson, R.C., Handy, D.E., Loscalzo, J. and Leopold, J.A. 2011. Bone morphogenetic protein-2 activates NADPH oxidase to increase endoplasmic reticulum stress and human coronary artery smooth muscle cell calcification. *Biochem. Biophys. Res. Commun.* 413: 436-441.
6. Liu, S., Hu, P., Hou, Y., Li, P., Li, X. and Tian, Q. 2011. The additive effect of mesenchymal stem cells and bone morphogenetic protein 2 on γ -irradiated bone marrow in mice. *Cell Biochem. Biophys.* 61: 539-550.
7. Hsu, Y.L., Huang, M.S., Yang, C.J., Hung, J.Y., Wu, L.Y. and Kuo, P.L. 2011. Lung tumor-associated osteoblast-derived bone morphogenetic protein-2 increased epithelial-to-mesenchymal transition of cancer by Runx2/Snail signaling pathway. *J. Biol. Chem.* 286 37335-37346.
8. Jang, W.G., Kim, E.J., Kim, D.K., Ryoo, H.M., Lee, K.B., Kim, S.H., Choi, H.S. and Koh, J.T. 2012. BMP2 protein regulates osteocalcin expression via Runx2-mediated Atf6 gene transcription. *J. Biol. Chem.* 287: 905-915.
9. Zhang, J. and Wang, J.H. 2012. BMP-2 mediates PGE(2) -induced reduction of proliferation and osteogenic differentiation of human tendon stem cells. *J. Orthop. Res.* 30: 47-52.

CHROMOSOMAL LOCATION

Genetic locus: BMP2 (human) mapping to 20p12.3.

PRODUCT

BMP-2 (h2): 293 Lysate represents a lysate of human BMP-2 transfected 293 cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

BMP-2 (h2): 293 Lysate is suitable as a Western Blotting positive control for human reactive BMP-2 antibodies. Recommended use: 10-20 μ l per lane.

Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.