

- [13] Nakase, T. and Miyaji, T. (2003) Localization of bone morphogenetic protein-2 in human osteoarthritic cartilage and osteophyte. *Osteoarthritis Cartilage* 11, 278–284.
- [14] Chen, D. and Zhao, M. (2004) Bone morphogenetic proteins. *Growth Factors* 22, 233–241.
- [15] Matsubara, T. and Kida, K. (2008) BMP2 regulates Osterix through Msx2 and Runx2 during osteoblast differentiation. *J. Biol. Chem.* 283, 29119–29125.
- [16] Katagiri, T. and Yamaguchi, A. (1994) Bone morphogenetic protein-2 converts the differentiation pathway of C2C12 myoblasts into the osteoblast lineage. *J. Cell Biol.* 127, 1755–1766.
- [17] Yamaguchi, A. and Ishizuya, T. (1996) Effects of BMP-2, BMP-4, and BMP-6 on osteoblastic differentiation of bone marrow-derived stromal cell lines, ST2 and MC3T3-G2/PA6. *Biochem. Biophys. Res. Commun.* 220, 366–371.
- [18] Mylona, E. and Jones, K.A. (2006) CD44 regulates myoblast migration and differentiation. *J. Cell. Physiol.* 209, 314–321.
- [19] Ariyoshi, W. and Okinaga, T. (2014) High molecular weight hyaluronic acid regulates osteoclast formation by inhibiting receptor activator of NF- κ B ligand through Rho kinase. *Osteoarthritis Cartilage* 1, 111–120.
- [20] Schmidt, K. and Schinke, T. (2005) The high mobility group transcription factor Sox8 is a negative regulator of osteoblast differentiation. *J. Cell Biol.* 168, 899–910.
- [21] Katagiri, T. and Imada, M. (2002) Identification of a BMP-responsive element in *Id1*, the gene for inhibition of myogenesis. *Genes Cells* 7, 949–960.
- [22] Ohte, S. and Katagiri, T. (2011) A novel mutation of *ALK2*, L196p, found in the most benign case of fibrodysplasia ossificans progressive activates BMP-specific intracellular signaling equivalent to a typical mutation, R206H. *Biochem. Biophys. Res. Commun.* 407, 213–218.
- [23] Bourrignon, L.Y. and Iida, N. (1995) Involvement of CD44 and its variant isoforms in membrane-cytoskeleton interaction, cell adhesion and tumor metastasis. *J. Neurooncol.* 26, 201–208.
- [24] Martin, G.S. (2003) Cell signaling and cancer. *Cancer Cell* 4, 167–174.
- [25] Parri, M. and Chiarugi, P. (2010) Rac and Rho GTPases in cancer cell motility control. *Cell Commun. Signal.* 8, 23.
- [26] Yoshida, T. and Clark, M.F. (2009) The small GTPase RhoA is crucial for MC3T3-E1 osteoblastic cell survival. *J. Cell. Biochem.* 106, 896–902.
- [27] Kazmers, N.H. and Yoshida, T. (2009) Rho GTPase signaling and PTH3-34, but not PTH 1–34, maintain the actin cytoskeleton and antagonize bisphosphonate effects in mouse osteoblastic MC3T3-E1 cells. *Bone* 45, 52–60.
- [28] Yang, Y.S. and Tian, Y.J. (2011) Mechanisms by which the inhibition of specific intracellular signaling pathways increase osteoblast proliferation on apatite surfaces. *Biomaterials* 32, 2851–2861.
- [29] Yoshikawa, H. and Yoshioka, K. (2009) Stimulation of ectopic bone formation in response to BMP-2 by Rho kinase inhibitor: a pilot study. *Clin. Orthopedics Related Res.* 467, 3087–3095.
- [30] Hagihara, M. and Endo, M. (2011) Neogenin, a receptor for bone morphogenetic proteins. *J. Biol. Chem.* 286, 5157–5165.
- [31] Kaneshiro, S. and Ebina, K. (2013) IL-6 negatively regulates osteoblast differentiation through the SHP2/MEK2 and SHP2/Akt2 pathways in vitro. *J. Bone Miner. Metab.*
- [32] Moskowitz, R. and Altman, R. (2004) Intra-articular hyaluronic acid for treatment of osteoarthritis of the knee. *JAMA* 291, 1440–1441. author reply 1–2.
- [33] Akmal, M. and Singh, A. (2005) The effects of hyaluronic acid on articular chondrocytes. *Bone Joint J.* 87, 1143–1149.
- [34] Chard, J. and Lohmander, S. (2005) Osteoarthritis of the knee. *Clin. Evid.* 14, 1506–1522.
- [35] van der Kraan, Peter M. and van den Berg, Wim B. (2006) Review Osteophytes: relevance and biology. *Osteoarthritis Cartilage* 15, 237–244.
- [36] Gobeze, R. and Kho, A. (2007) High abundance synovial fluid proteome: distinct profiles in health and osteoarthritis. *Arthritis Res. Ther.* 9, R36.

