Product Description

Bone is a dynamic tissue, being continuously remodeled by thecoordinated actions of osteoclasts and osteoblast. Osteoblasts, the bone-formingcells, are derived originally from pluripotent mesenchymal stem cells. They synthesizeand secrete organic extracellular matrix, osteoid, which is composed primarily of type I collagen. Osteoid is calcified by osteoblasts and during this process the cells become encased in lacunae within the calcified material and become osteocytes. Osteoblasts express protease-activated receptor-1 and vascular endothelial cell growth factor [1]. Studies show that leukemia inhibitory factor can bind to the osteoblast cell surface and induce bone formation both in vitro and in vivo [2]. The balance between osteoblast recruitment, proliferation, differentiation and apoptosis in sutures between cranial bones is essential for calvarial bone formation [3].

iXCells Biotechnologies provides high quality Human Osteoblasts-Femoral (HOb-f), which are isolated from human femur and cryopreserved at P0, with >0.5 million cells in each vial. HOb-f are characterized by the cytochemical detection of AP and mineral deposition. These HOb-f are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fungi and can further expand for 12 population doublings in Osteoblast Growth Medium (Cat# MD-0054) under the condition suggested by iXCells Biotechnologies.

Product Details

Tissue	Human femur
Package Size	0.5 million cells/vial
Passage Number	P0
Shipped	Cryopreserved
Storage	Liquid nitrogen
Growth Properties	Adherent
Media	Osteoblast Growth Medium (Cat# MD-0054)

References

[1] Steinbrech, D. S., Mehrara, B. J., Saadeh, P. B., Greenwald, J.A., Spector, J. A., Gittes, G. K. and Longaker, M. T. (2000) VEGF expression in an osteoblast-like cell line is regulated by a hypoxia response mechanism. Am. J. Physiol. Cell Physiol. 278: C853-C860.
[2] Dazai, S., Akita, S., Hirano, A., Rashid, M. A., Naito, S., Akino, K., Fujii, T. (2000) Leukemia inhibitory factor enhances bone formation in calvarial bone defect. J. Craniofac. Surg. 11(6):513-20.
[3] Marie, P. J., Debiais, F., Hay, E. (2002) Regulation of human cranial osteoblast phenotype by FGF-2, FGFR-2 and BMP-2 signaling. Histol. Histopathol.17(3):877-85.

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