Product Description

Bone is a dynamic tissue, being continuously remodeled by the coordinated actions of osteoclasts and osteoblasts. Osteoblasts, the bone-forming cells, are derived originally from pluripotent mesenchymal stem cells. They synthesize and 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-Rheumatoid Arthritis (HOb-RA), which are isolated from bone of patients with rheumatoid arthritis (RA) and cryopreserved at P2, with >0.5 million cells in each vial. RA provide an excellent model system to study the patophisiology of that disease in vitro, including matrix mineralization, effects of inflammatory mediators and bone morphogenic proteins, physiological control of bone remodeling and regulation of bone metabolism. HOb-RA are characterized by the cytochemical detection of AP and mineral deposition. These HOb-RA are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fungi and can further expand for 10 population doublings in Osteoblast Growth Medium (Cat# MD-0054) under the condition suggested by iXCells Biotechnologies.

Product Details

Tissue	Bone of patients with rheumatoid arthritis (RA)
Package Size	0.5 million cells/vial
Passage Number	P2
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.

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura,
Delhi – 110034 (INDIA).
Mobile: +91-9810521400, Ph: +91-11-42208000
Email: customerservice@lifetechindia.com
Web: www.lifetechindia.com