Product Description

Cardiac fibroblasts (CF) provide structural support for cardiac myocytes and are responsible for extracellular matrix synthesis in the heart during growth and pathophysiological conditions. CF are an important cellular component of myocardial responses to injury and the source of paracrine growth factors. CF proliferation and synthesis of matrix is essential for scar formation at sites of myocardial infarction [1] and cardiac fibrosis [2]. CF cultures have been widely used as a model to study the cardiac matrix remodeling by physiological (exercise) and pathological (hypertension) stressors [3]. CF also have been found to form electric coupling with myocytes through gap junctions exerting electrotonic influences on the cells. These electronic couplings are suggested to play an important role in genesis of complex fractionated atrial electrogram sites and thus are a perfect model for studying atrial fibrillation [4].

iXCells Biotechnologies provides high quality Human Cardiac Fibroblasts-fetal atrial (HCF-fa), which are isolated from human fetal atrium and cryopreserved at P1, with >0.5 million cells in each vial. HCF-fa express fibronectin and are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fungi. They can further expand for 16 population doublings in Fibroblast Growth Medium (Cat# MD-0011) under the condition suggested by iXCells Biotechnologies.

Product Details

Tissue	Human fetal atrium
Package Size	0.5 million cells/vial
Passage Number	P1
Shipped	Cryopreserved
Storage	Liquid nitrogen
Growth Properties	Adherent
Media	Fibroblast Growth Medium (Cat# MD-0011)

References

[1] Sabri A, Short J, Guo J, Steinberg SF. (2002) Protease-activated receptor-1-mediated DNA synthesis in cardiac fibroblast is via epidermal growth factor receptor transactivation: distinct PAR-1 signaling pathways in cardiac fibroblasts and cardiomyocytes. Circ Res. 91: 532-9.
[2] Akiyama-Uchida Y. (2002) Norepinephrine enhances fibrosis mediated by TGF-beta in cardiac fibroblasts. Hypertension. 40: 148-54.
[3] Burgess ML, Terracio L, Hirozane T, Borg TK. (2002) Differential integrin expression by cardiac fibroblasts from hypertensive and exercise-trained rat hearts. Cardiovasc Pathol. 11: 78-87.
[4] Ashihara T, Haraguchi R, Nakazawa K, Namba T, Ikeda T, Nakazawa Y, Ozawa T, Ito M, Horie M, Trayanova NA. (2012) The role of fibroblasts in complex fractionated electrograms during persistent/permanent atrial fibrillation: implications for electrogram-based catheter ablation. Circ Res. 110: 275-84.

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