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Product Information

Human Renal Fibroblasts

Catalog Number	10HU-238	Cell Number	0.5 million cells/vial
Species	*Homo sapiens*	Storage Temperature	Liquid Nitrogen

Description

Fibroblasts and myofibroblasts are believed to be the key effector cells in renal fibrogenesis responsible for the synthesis and deposition of extracellular matrix components [1]. Although fibroblasts are histologically visible in normal kidneys, there are relatively few of them and proximal tubular epithelial cells predominate. In progressive disease, however, the interstitium becomes filled with myofibroblasts [2]. Fibroblasts are considered the primary matrix-producing cells in the kidney and hence they are clinically relevant as principal mediators of renal fibrosis associated with progressive renal failure [3].

iXCells Biotechnologies provides high quality Human Renal Fibroblasts, which are isolated from adult human kidney tissue and cryopreserved at P1, with >0.5 million cells in each vial. Human Renal Fibroblasts express fibronectin and are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fungi. They can further expand no more than 3 passages in Fibroblast Growth Medium (Cat# MD-0011) under the condition suggested by iXCells Biotechnologies.

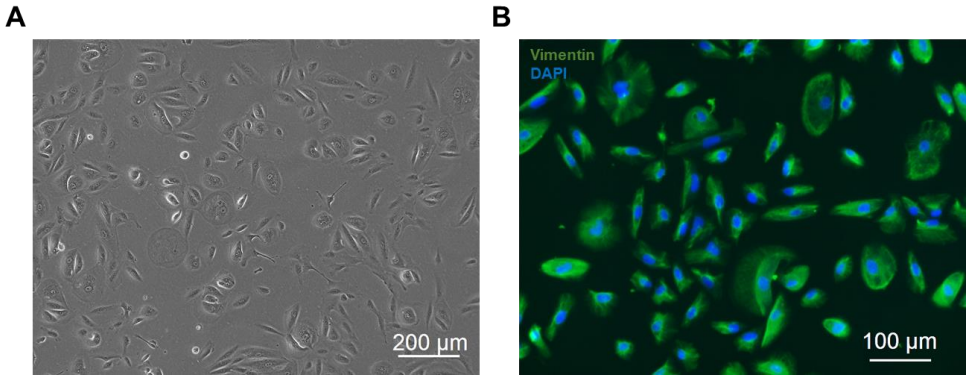

Figure 1. Human Renal Fibroblasts. (A) Phase contrast image. (B) Immunofluorescence staining with antibodies against Vimentin.

Product Details

Tissue	normal human kidney tissue
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)

Protocols

Thawing of Frozen Cells

1. Upon receipt of the frozen Human Renal Fibroblasts, it is recommended to thaw the cells and initiate the culture immediately in order to retain the highest cell viability.
2. To thaw the cells, put the vial in 37°C water bath with gentle agitation for 1-2 minutes. Keep the cap out of water to minimize the risk of contamination.
3. Pipette the cells into a 15 mL conical tube with 5 mL fresh **Fibroblast Growth Medium (Cat# MD-0011)**.
4. Centrifuge at 1,000 rpm (~220 g) for 5 minutes under room temperature.
5. Remove the supernatant and resuspend the cells in Fibroblast Growth Medium (Cat#MD-0011).
6. Culture the cell in a T75 flask. Change medium every other day until the cells reach 80-90% confluence.

Safety Precaution: *it is highly recommended that protective gloves and clothing should be used when handling human cells.*

Standard Culture Procedure

1. Human Renal Fibroblasts can be cultured in **Fibroblast Growth Medium (Cat# MD-0011)**. Change medium every other day.
2. When cells reach ~80-90% confluence, remove the medium, and wash once with sterile PBS (5 mL/T75 flask).
3. Add 3 mL of 0.25% Trypsin-EDTA to the flask and incubate for 3-5 minutes at 37°C. Neutralize the Trypsin by adding 2-3 volumes of cell culture medium.
4. Centrifuge 1,000 rpm (~220 g) for 5 minutes and resuspend the cells in desired volume of medium.
5. Seed the cells onto the new gelatin-coated culture vessels at 5 × 10^3 cells/cm^2. Change medium every other day until the cells reach 80-90% confluence.

References

[1] Soma Meran and Robert Steadman (2011) “Fibroblasts and myofibroblasts in renal fibrosis”. Int. J. Exp. Path. 92: 158–167
[2] H. Terence Cook. (2010) “The Origin of Renal Fibroblasts and Progression of Kidney Disease”. The American Journal of Pathology, 176 (1):22-24.
[3] Frank Strutz and Michael Zeisberg. (2002) “Renal Fibroblasts and Myofibroblasts in Chronic Kidney Disease”. JASN, 17: 2992-2998.

Disclaimers