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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.

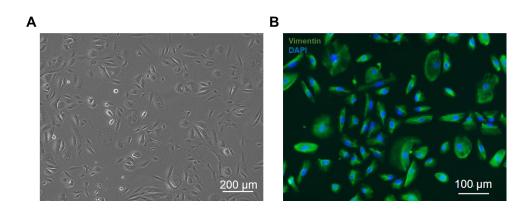


Figure 1. Human Renal Fibroblasts. (A) Phase contrast image. (B) Immunofluorescence staining with antibodies against Vimentin.

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.
- 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/cm². 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.

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