

Product Information

Human Pancreatic Stellate Cells (HPSC)

Catalog Number	10HU-211	Cell Number	0.5 million cells/vial
Species	<i>Homo sapiens</i>	Storage Temperature	Liquid nitrogen

Description

Human Pancreatic Stellate Cells (HPSC) are the main fibroblastic cells of the pancreas. HPSC are responsible for the synthesis and the degradation of the extracellular matrix proteins that promote tissue repair. They are found adjacent to pancreatic acinar cells and around small pancreatic ducts and blood vessels. When HPSC are activated, they assume myofibroblast-like morphology and secrete excessive amounts of extracellular matrix proteins, which can lead to desmoplasia in chronic pancreatitis and adenocarcinoma [1,2]. Recent studies have shown that HPSC can also act as progenitor cells, immune cells, and intermediaries in exocrine pancreatic secretion [3]. Additionally, HPSC stimulate pancreatic cancer proliferation, inhibit apoptosis, and enhance angiogenesis [2]. HPSC are the ideal model for studying pancreatic tumor formation and they can be used to develop novel therapies for treatment of chronic pancreatitis and adenocarcinoma.

iXCells Biotechnologies offers HPSC from human pancreas. HPSC are cryopreserved after purification and delivered frozen. Each vial contains $>5 \times 10^5$ cells in 1 ml volume. HPSC are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast and fungi. HPSC are guaranteed to further expand for 16 population doublings in **Stellate Cell Growth Medium (Cat # MD-0014)**.

Product Details

Tissue	Human Pancreas
Package Size	0.5 million cells/vial
Passage Number	P2
Shipped	Cryopreserved
Storage	Liquid nitrogen
Growth Properties	Adherent
Media	Stellate Cell Growth Medium (Cat# MD-0014)

Protocols

Thawing of Frozen Cells

1. Upon receipt of the frozen Human Pancreatic Stellate Cells (HPSC), it is recommended to thaw the cells and initiate the culture immediately in order to retain the highest cell viability.
2. Optional: Pre-coat the culture dishes or flasks with 0.01% poly-L-lysine for 1 hour at 37°C before use.
3. To thaw the cells, put the cryovial in 37°C water bath with gentle agitation for 1-2 minutes. Keep the cap out of water to minimize the risk of contamination.
4. Pipette the cells into a 15 mL conical tube with 5 mL fresh Stellate Cell Growth Medium (Cat# MD-0014).
5. Centrifuge at 1,000 rpm (~220 g) for 5 minutes under room temperature.
6. Carefully remove the supernatant and resuspend the cells in 1 mL Stellate Cell Growth Medium (Cat# MD-0014).
7. Count the cell number. Culture the cells in the culture vessels at the density of 5×10^3 cells/cm².
8. Change the medium every other day until the cells reach 50-60%, and then change the medium every day. Passage the cells when they reach 80-90%.

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

Standard Culture Procedure

1. Human Pancreatic Stellate Cells (HPSC) can be cultured in Stellate Cell Growth Medium (Cat# MD-0014). Passage the cells when they reach 80-90%.
2. Optional: Pre-coat the culture dishes or flasks with 0.01% poly-L-lysine for 1 hour at 37°C before use.
3. Remove the medium and wash once with sterile PBS (5ml/T75 flask).
4. Add 3 mL of 0.05% Trypsin-EDTA to the flask and incubate for 3-5 minutes at 37°C. Neutralize the enzyme by adding 2-3 volumes of the culture medium.
5. Centrifuge at 1,000 rpm (~220 g) for 5 minutes and resuspend the cells in desired volume of medium.
6. Count the cell number. Culture the cells in the culture vessels at the density of 5×10^3 cells/cm².
7. Change the medium every other day until the cells reach 50-60%, and then change the medium every day.

References

- [1] Erkan, M., Hausmann, S., Michalski, C., Schlitter, M., Fingerle, A., Friess, H., and Kleeff, J. (2012). How fibrosis influences imaging and surgical decision in pancreatic cancer. *Front. Physio.* 3:389.
- [2] Apte, M., Pirola, R., and Wilson, J. (2012). Pancreatic stellate cells: A starring role in normal and diseased pancreas. *Front. Physio.* 3:344.
- [3] Mato, E., Lucas, M., Petriz, J., Gomis, R., and Novials, A. (2009). Identification of a pancreatic stellate cell population with properties of progenitor cells: new role for stellate cells in the pancreas. *Biochem. J.* 421:181.

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