HOG Human Oligodendroglioma Cell Line

Cancer Cell Line

Cat. # SCC163

FOR RESEARCH USE ONLY.
NOT FOR USE IN DIAGNOSTIC PROCEDURES.
NOT FOR HUMAN OR ANIMAL CONSUMPTION.

Pack size: ≥1x10^6 viable cells/vial

Store in liquid nitrogen

Data Sheet

Background

HOG is a clonal cell line derived from a surgically removed human oligodendroglioma (HOG)[1]. HOG cells express oligodendrocyte markers including low levels of the 15-kDa form of myelin basic protein (MBP) and high levels of CNPase protein. HOG cells do not express GFAP, a astrocyte marker and were found to have minimal levels of glutamine synthetase activity[1,3,4]. HOG cells express neurotransmitter receptors such as A2-adenosine, prostaglandin E1 (PGE_1) and β2-adrenergic receptores (B-ARs) that activate the adenylate cylase signaling pathway[1]. HOG cells also express muscarinic and histamine receptors that are linked to inositol phosphate signaling pathways[1, 2].

HOG cell line is a useful model to study signal transduction pathways of oligodendrocyte metabolism and the role of oligodendrocytes in neurodegenerative diseases[4].

Short tandem repeat (STR) Profile

D3S1358: 16	D16S539: 9
TH01: 9	CSF1PO: 12
D21S11: 30	Penta D: 9
D18S51: 19	vWA: 15
Penta E: 14	D8S1179: 10, 12
D5S818: 12, 13	TPOX: 9
D13S317: 12	FGA: 25
D7S820: 10	Amelogenin: X

Cancer cell lines are inherently genetically unstable. Genetic instability may arise in the form of loss of heterozygosity of alleles at one or more genetic sites with increased passages.

Quality Control Testing

- Each vial contains ≥ $1X10^6$ viable cells.
- Cells are tested by PCR and are negative for HPV-16, HPV-18, Hepatitis A, C, and HIV-1 & 2 viruses as assessed by a Human Essential CLEAR panel by Charles River Animal Diagnostic Services.
- Cells are negative for mycoplasma contamination.
- Each lot of cells is genotyped by STR analysis to verify the unique identity of the cell line.

Storage and Handling

HOG Human Oligodendroglioma Cell Line should be stored in liquid nitrogen. The cells can be cultured for at least 10 passages after initial thawing without significantly affecting the cell marker expression and functionality.

Representative Data

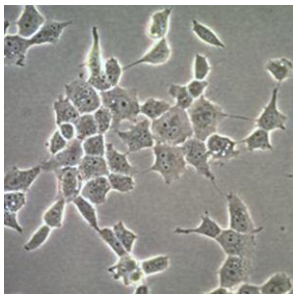

Figure 1. HOG cells one day after thaw.

References

1. Post GR, Dawson G (1992) Characterization of a cell line derived from a human oligodendroglioma. *Mol Chem Neuropathol* 16(3): 303-317.

2. Post GR, Dawson G (1992) Regulation of carbachol- and histamine-induced inositol phospholipid hydrolysis in a human oligodendroglioma. Glia 5(2): 122-130.

3. Buntinx M, Vanderlocht J, Hellings N, Vandenabeele F, Lambrichts I, Raus J, Ameloot M, Stinissen P, Steels P (2003) Characterization of three human oligodendroglial cell lines as a model to study oligodendrocyte injury: morphology and oligodendrocyte-specific gene expression. *J Neurocytol* 32(1): 25-38.

4. De Vries GH, Boullerne AI (2010) Glial cell lines: an overview. *Neurochem Res* 35(12): 1978-200

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Protocols

Thawing Cells

1. Do not thaw the cells until the recommended medium and flasks are on hand.

   Cells are thawed and expanded in DMEM Complete Medium (Cat. No. SLM-241-B) **or** in DMEM-High Glucose (Sigma Cat. No. 6546), 10% FBS (Cat. No. ES-009-B) and 2 mM L-Glutamine (Cat. No. TMS-002-C) and 1X Penicillin-Streptomycin Solution (Cat. No. TMS-AB2-C) (optional).
2. Remove the vial of frozen HOG cells from liquid nitrogen and incubate in a 37°C water bath. Closely monitor until the cells are completely thawed. Maximum cell viability is dependent on the rapid and complete thawing of frozen cells.

   IMPORTANT: Do not vortex the cells.
3. As soon as the cells are completely thawed, disinfect the outside of the vial with 70% ethanol. Proceed immediately to the next step.
4. In a laminar flow hood, use a 1 or 2 mL pipette to transfer the cells to a sterile 15 mL conical tube. Be careful not to introduce any bubbles during the transfer process.
5. Using a 10 mL pipette, slowly add dropwise 9 mL of HOG Expansion Medium (Step 1 above) to the 15 mL conical tube.

   IMPORTANT: Do not add the entire volume of media all at once to the cells. This may result in decreased cell viability due to osmotic shock.
6. Gently mix the cell suspension by slowly pipetting up and down twice. Be careful not to introduce any bubbles.

   IMPORTANT: Do not vortex the cells.
7. Centrifuge the tube at 300 x g for 2-3 minutes to pellet the cells.
8. Decant as much of the supernatant as possible. Steps 5-8 are necessary to remove residual cryopreservative (DMSO).
9. Resuspend the cells in 10 -15 mL of HOG Expansion Medium.
10. Transfer the cell mixture to a T75 tissue culture flask.
11. Incubate the cells at 37°C in a humidified incubator with 5% CO_2.
12. The next day, exchange the medium with 10-15 mL of fresh HOG Expansion Medium. Exchange with fresh medium every other day.

Cell Passage

1. Cells are ready to be passage when they reach 90 – 95% confluency.
2. Rinse flask once with 10 – 15 mL 1X PBS w/o Ca2+, Mg2+ (Cat. No. BSS-1006-B). Aspirate after the rinse.
3. Add 5 mL Accutase (Cat. No. SCR005) to the T75 flask. Swirl the flask to ensure that the Accutase completely covers the surface of the flask.
4. Incubate in 37°C incubator for 3-5 minutes.
5. After 3-5 minutes, tap firmly on the sides of the flask to dislodge the cells.
6. Transfer the dissociated cells to a 15 mL conical tube. Add 7-10 mL HOG Expansion Medium to the flask to collect residual cells.
7. Centrifuge at 800-1000 rpm for 3-5 minutes.
8. After centrifugation, discard the supernatant and resuspend the cell pellet in appropriate volume for cell counting.
9. Cells may be passaged using a 1:6 to 1:9 split.

Cryopreservation of Cells

HOG Human Oligodendroglioma Cell Line may be frozen in the expansion medium plus 10% DMSO using a Nalgene slow freeze Mr. Frosty container.

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