Product sheet

H4 Cells | 300184

General information

Description	Derived from a 37-year-old White male with neuroglioma, these remarkable epithelial cells offer a valuable resource for neuroscience research. H4 cells closely resemble glial cells in vitro and have gained significant recognition for their applicability in studying neuronal impairment and apoptosis. As an ideal model system, H4 cells boast an adherent phenotype, ensuring their easy handling and compatibility with various experimental setups. These cells hold immense potential for multiple applications, including 3D cell culture and neuroscience research. With their origins in the brain tissue of a human host, H4 cells represent a realistic and biologically relevant tool for investigating neural processes. Researchers can harness the power of these cells to unravel intricate mechanisms underlying neuronal function, disorders, and potential therapeutic interventions. One notable advantage of H4 cells lies in their amenability to transient transfection, enabling the introduction of exogenous genetic material into the cells for targeted investigations. This feature facilitates the manipulation of H4 cells, empowering researchers to delve into specific genetic pathways and unravel the mysteries of neurobiology. Our H4 cells product category encompasses an innovative approach to human cell lines, offering a versatile and efficient toolset for advancing scientific discoveries. By leveraging the potential of H4 cells, researchers can propel the field of neuroscience forward, unravelling the complex interplay of neural components and shedding light on the mechanisms of neuroglioma and associated diseases. With their epithelial morphology and glial-like properties, H4 cells represent a crucial stepping stone in understanding the human brain's intricate workings. Engage in groundbreaking research and uncover transformative insights by harnessing the power of H4 cells-the ultimate ally in your pursuit of knowledge in neuroscience and beyond.
Organism	Human
Tissue	Brain
Disease	Neuroglioma
Synonyms	H-4

Characteristics

Age	37 years
Gender	Male
Ethnicity	Caucasian

Growth properties	Adherent

Identifiers / Biosafety / Citation

Citation	H4 (Cytion catalog number 300184)
Biosafety level	1

Expression / Mutation

Protein expression	pGP9.5 postive, NeuN positive, NSE negative
Isoenzymes	G6PD, B, PGM1, 1-2, PGM3, 1, ES-D, 1, Me-2, 0, AK-1, 1, GLO-1, 2.
Tumorigenic	No
Karyotype	modal number = 75. range 45 = 80. Y chromosome present

Handling

Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 1.5 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
Medium supplements	Supplement the medium with 10% FBS
Passaging solution	Accutase
Subculturing	Remove the old medium from the adherent cells and wash them with PBS that lacks calcium and magnesium. For T25 flasks, use 3-5 ml of PBS, and for T75 flasks, use 5-10 ml. Then, cover the cells completely with Accutase, using 1-2 ml for T25 flasks and 2.5 ml for T75 flasks. Let the cells incubate at room temperature for 8-10 minutes to detach them. After incubation, gently mix the cells with 10 ml of medium to resuspend them, then centrifuge at 300xg for 3 minutes. Discard the supernatant, resuspend the cells in fresh medium, and transfer them into new flasks that already contain fresh medium.
Split ratio	A ratio of 1:3 is recommended
Seeding density	1 x 10^4 cells/cm^2

Fluid renewal	2 to 3 times per week
Freezing recovery	After thawing, plate the cells at 5 x 10^4 cells/cm^2 and allow the cells to recover from the freezing process and to adhere for at least 48 hours.
Freeze medium	CM-1 (Cytion catalog number 800100) or CM-ACF (Cytion catalog number 806100)
Handling of cryopreserved cultures	1. Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit. 2. Upon receipt, either store the cryovial immediately at temperatures below -150?C to ensure the preservation of cellular integrity, or proceed to step 3 if immediate culturing is required. 3. For immediate culturing, swiftly thaw the vial by immersing it in a 37?C water bath with clean water and an antimicrobial agent, agitating gently for 40-60 seconds until a small ice clump remains. 4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening. 5. Carefully open the disinfected vial and transfer the cell suspension into a 15 ml centrifuge tube containing 8 ml of room-temperature culture medium, mixing gently. 6. Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium. Optionally, skip centrifugation but remove any remaining freezing medium after 24 hours. 7. Gently resuspend the cell pellet in 10 ml of fresh culture medium. For adherent cells, divide the suspension between two T25 culture flasks; for suspension cultures, transfer all the medium into one T25 flask to promote effective cell interaction and growth. 8. Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

Quality control / Genetic profile / HLA

Sterility	Mycoplasma contamination is excluded using both PCR-based assays and luminescence-based mycoplasma detection methods. To ensure there is no bacterial, fungal, or yeast contamination, cell cultures are subjected to daily visual inspections.

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STR profile	**Amelogenin**: x,y **CSF1PO**: 10,12 **D13S317**: 12 **D16S539**: 11,12 **D5S818**: 10,12 **D7S820**: 8,11 **TH01**: 7,9 **TPOX**: 8,11 **vWA**: 14,18 **D3S1358**: 17,18 **FGA**: 30,31 **D1S1656**: 14,16 **D6S1043**: 5,12 **D2S1338**: 10,12 **D12S391**: 14 **D19S433**: 19,25
HLA alleles	**A***: 03:01:01, 30:02:01 **B***: 08:01:01, 18:01:01 **C***: 05:01:01, 07:01:01 **DRB1***: 03:01:01 **DQA1***: 05:01:01 **DQB1***: 02:01:01 **DPB1***: 01:01:01, 04:01:01 **E**: 01:03:02