Product sheet

A673 Cells | 300454

General information

Description	The A673 cell line is a valuable resource in biological science. Derived from the muscle tissue of a 15-year-old female patient diagnosed with Ewings Sarcoma, this cell line exhibits a distinct polygonal morphology. Originally the cell line was thought to be derived from a rhabdomyosarcoma (RMS). One of the remarkable characteristics of A673 cells is their ability to produce several growth factors that possess oncogenic potential. These cells also secrete growth-inhibitory factors, providing a balanced environment for cellular growth regulation. Such properties make A673 cells an excellent model for investigating the interplay between tumour-promoting and tumour-suppressing factors. A673 cells have demonstrated tumorigenic potential, as they can induce tumour formation in immunosuppressed mice. Moreover, studies have identified hypermethylated promoters in cancer-related genes within the A673 cell line. These genetic alterations further contribute to its relevance in cancer research, offering a platform to explore epigenetic modifications and their impact on tumour development and progression. While A673 cells are often referred to as Ewing tumour (ET) or sarcoma (ES), they are also associated with rhabdomyosarcoma (RMS). Notably, the A673 cell line harbours a complex karyotype with a specific translocation involving chromosomes 11 and 22. This translocation leads to the fusion of the EWS and FLI1 genes, which is a characteristic genetic event in Ewing Tumor.
Organism	Human
Tissue	Bone
Disease	Ewing's Sarcoma
Synonyms	A-673, RMS 1598, RMS1598

Characteristics

Age	15 years
Gender	Female
Ethnicity	Caucasian
Morphology	Fibroblast-like
Growth properties	Monolayer, adherent

Identifiers / Biosafety / Citation

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Citation	A673 (Cytion catalog number 300454)
Biosafety level	1
Depositor	Aaronson

Expression / Mutation

Tumorigenic	Yes, in immunosuppressed mice
Virus susceptibility	Highly sensitive to human adenoviruses

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
Doubling time	28 hours
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 1:5 to 1:20 is recommended
Seeding density	1 x 10^4 cells/cm^2 will result in a confluent monolayer within 8 days.
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 24 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,x
CSF1PO: 11,12
D13S317: 8,13
D16S539: 11
D5S818: 11,12
D7S820: 10,12
TH01: 09. Mrz
TPOX: 8
vWA: 15,18
D3S1358: 14
D21S11: 29,30.2
D18S51: 13,16
D8S1179: 11,13
FGA: 19,2
D2S1338: 16,21
D19S433: 13,14