Product sheet

A498 | 300113

General information

Description	A-498 cells are a valuable resource in cancer research, derived from kidney tissue obtained from a 52-year-old female kidney cancer patient in 1973. These cells exhibit epithelial morphology, grow adherently and are suitable transfection hosts for cancer-related studies. A-498 is classified as a "classical" RCC cell line belonging to the NCI-60 panel and is widely used in cancer research. While no mutations in the vhl gene have been detected in A-498, observations suggest a potential papillary origin based on histology and chromosomal analysis. However, A-498 is generally considered a model for ccRCC, with some exceptions. These human cells allow researchers to study various biological processes related to cancer. Derived from Homo sapiens, specifically kidney tissue, A-498 cells are valuable for investigating kidney-specific mechanisms, signalling pathways, and potential therapeutic targets in renal cell carcinoma. A-498 cells have tumorigenic properties, forming undifferentiated carcinoma tumours and demonstrating tumorigenicity in experimental models. A-598 cells find applications in 3D cell culture, cancer research, high-throughput screening, and toxicology studies. Furthermore, the isoenzyme analysis of A-498 cells reveals AK-1, 1; ES-D, 2; G6PD, B; GLO-I, 2; Me-2, 1; PGM1, 1-2; PGM3, 1.
Organism	Human
Tissue	Kidney
Disease	Renal cell carcinoma
Synonyms	A-498

Characteristics

Age	52 years
Gender	Male
Ethnicity	Caucasian
Morphology	Epithelial-like
Growth properties	Monolayer, adherent

Identifiers / Biosafety / Citation

Citation	A498 (Cytion catalog number 300113)
Biosafety level	1

Expression / Mutation

Isoenzymes	PGM3, 1, PGM1, 1-2, ES-D, 2, Me-2, 1, AK-1, 1, GLO-1, 2, G6PD, B
Tumorigenic	Yes, in nude mice. Forms undifferentiated carcinoma, also forms tumors in anti thymocyte serum treated newborn mice
Ploidy status	Bimodal, tetraploid

Handling

Culture Medium	EMEM
Medium supplements	10% FBS, w: 2 mM L-Glutamine, w: 1.5 g/L $NaHCO_3$, w: EBSS, w: 1 mM Sodium pyruvate, w: NEAA
Passaging solution	Accutase
Doubling time	62 hours
Subculturing	Remove medium and rinse the adherent cells using PBS without calcium and magnesium (3-5 ml PBS for T25, 5-10 ml for T75 cell culture flasks). Add Accutase (1-2 ml per T25, 2.5 ml per T75 cell culture flask), the cell sheet must be covered completely. Incubate at ambient temperature for 8-10 minutes. Carefully resuspend the cells with medium (10 ml), centrifuge for 3 min at 300 g, resuspend cells in fresh medium and dispense into new flasks which contain fresh medium.
Split ratio	A ratio of 1:2 to 1:4 is recommended
Seeding density	1 x 10^4 cells/cm^2 will result in a confluent monolayer within 4 days.
Fluid renewal	Every 3 days
Freezing recovery	After thawing, plate the cells at 2 x 10^4 cells/cm^2 and allow the cells to recover from the freezing process and to adhere for at least 24 to 48 hours.
Freeze medium	CM-1 (Cytion catalog number 800100) or CM-ACF (Cytion catalog number 806100)

Handling of cryopreserved cultures	The cells come deep-frozen shipped on dry ice. Please make sure that the vial is still frozen. If immediate culturing is not intended, the cryovial must be stored below -150 degree Celsius after arrival. If immediate culturing is intended, please follow the below instructions: Quickly thaw by rapid agitation in a 37 degree Celsius water bath within 40-60 seconds. The water bath should have clean water containing an antimicrobial agent. As soon as the sample has thawed, remove the cryovial from the water bath. A small ice clump should still remain and the vial should still be cold. From now on, all operations should be carried out under aseptic conditions. Transfer the cryovial to a sterile flow cabinet and wipe with 70% alcohol. Carefully open the vial and transfer the cell suspension into a 15 ml centrifuge tube containing 8 ml of culture medium (room temperature). Resuspend the cells carefully. Centrifuge at 300 x g for 3 min and discard the supernatant. The centrifugation step may be omitted, but in this case the remains of the freeze medium have to be removed 24 hours later. Resuspend the cells carefully in 10 ml fresh cell culture medium and transfer them into two T25 cell culture flasks. All further steps are described in the subculture section.
Handling of proliferating cultures	One or two cell culture flasks come filled with cell culture medium. Collect the entire medium in 1 or 2 x 50 ml centrifuge tubes, respectively. Carefully add 5 ml of cell culture medium to each T25 cell culture flask. Control the cell morphology and confluency under the microscope. Incubate at 37 degree Celsius for a minimum of 24 hours. Spin down the collected medium at 300 x g for 3 minutes to collect the cells which may have detached during transit. If a cell pellet is visible, resuspend the cells in 5 ml of cell culture medium and transfer to a T25 cell culture flask. Incubate at 37 degree Celsius for a minimum of 24 hours.

Quality control / Genetic profile / HLA

Sterility	Mycoplasma contaminations are ruled out through PCR-based and luminescence-based mycoplasma assays. The absence of bacterial, fungal or yeast contamination is controlled through daily visual cell monitoring.
STR profile	**Amelogenin**: x,x **CSF1PO**: 11,12 **D13S317**: 12 **D16S539**: 12 **D5S818**: 11,13 **D7S820**: 11,12 **TH01**: 6,9.3 **TPOX**: 8,11 **vWA**: 18 **D3S1358**: 15 **D21S11**: 28,32 **D18S51**: 17 **Penta E**: 10,14 **Penta D**: 9,14 **D8S1179**: 13,15 **FGA**: 18,2

HLA alleles	**A***: 02:01:01 **B***: 08:01:01 **C***: 07:01:01 **DRB1***: 03:01:01 **DQA1***: 05:01:01 **DQB1***: 02:01:01 **DPB1***: 01:01:01 **E**: 01:03:02