SUM159PT

305116

GENERAL INFORMATION

Description

The SUM159PT cell line is derived from an anaplastic carcinoma of the breast and is a model for triple-negative breast cancer (TNBC), a subtype lacking estrogen receptor (ER), progesterone receptor (PR), and HER2 expression. SUM159PT is characterized by its aggressive phenotype, anchorage-independent growth, and invasive potential, making it particularly valuable for studying TNBC biology and therapy. Genetic analysis of SUM159PT has revealed notable amplifications and deletions common in aggressive breast cancers. These include amplifications at chromosomal loci such as 8q (containing MYC) and losses at 8p, which are implicated in tumor progression. The line is aneuploid, consistent with many cancer cell lines, and shows alterations in pathways critical to proliferation and apoptosis. SUM159PT also exhibits basal-like features and expresses cytokeratins 5/6 and 14, markers associated with basal-type breast cancers. These characteristics reinforce its utility in modeling basal-like TNBC and exploring novel therapeutic approaches.
Sensitivity studies on SUM159PT have highlighted its response to BET bromodomain inhibitors such as JQ1, which target epigenetic regulators like BRD4. Treatment with JQ1 induces significant morphological changes, including senescence and basal-to-luminal differentiation, while inhibiting proliferation and promoting apoptosis. These effects underscore the role of transcriptional control in TNBC survival and suggest potential for combination therapies targeting epigenetic regulators in resistant TNBC subtypes. This cell line is extensively used in both in vitro assays and in vivo xenograft models to evaluate the efficacy of new treatments.

Tissue	Breast
Disease	Breast pleomorphic carcinoma

Synonyms

- SUM-159-PT
- SUM-159PT
- SUM 159PT
- SUM-159
- SUM 159
- SUM159
- 159 PT
- 159PT

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial

IDENTIFIERS

Citation

SUM159PT (Cytion catalog number 305116)

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NCBI TaxID	9606
Cellosaurus	CVCL_5423

HANDLING AND CULTURE

Culture medium

Ham's F12, w: 1.0 mM stable Glutamine, w: 1.0 mM Sodium pyruvate, w: 1.1 g/L NaHCO3 (Cytion article number 820600a)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% FBS, 1 µg/ml hydrocortisone, 5 µg/ml insulin

Dissociation reagent	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.

Fluid renewal	2 to 3 times per week

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

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.

Freeze medium	As a cryopreservation medium, we use complete growth medium (including FBS) + 10% DMSO for adequate post-thaw viability, or CM-1 (Cytion catalog number 800100), which includes optimized osmoprotectants and metabolic stabilizers to enhance recovery and reduce cryo-induced stress.

Storage conditions

For long-term preservation, place vials in vapor-phase liquid nitrogen at about −150 to −196 °C. Storage at −80 °C is acceptable only as a short interim step before transfer to liquid nitrogen.

Shipping conditions

Cryopreserved cell lines are shipped on dry ice in validated, insulated packaging with sufficient refrigerant to maintain approximately −78 °C throughout transit. On receipt, inspect the container immediately and transfer vials without delay to appropriate storage.

DONOR

Donor age	71 years

LEGAL AND SAFETY

Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Material Transfer Agreement required	Yes