Product sheet

SUM159PT Cells | 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.
Organism	Human
Tissue	Breast
Disease	Breast pleomorphic carcinoma
Synonyms	SUM-159-PT, SUM-159PT, SUM 159PT, SUM-159, SUM 159, SUM159, 159 PT, 159PT

Characteristics

Age	71 years
Gender	Female
Morphology	Epithelial
Growth properties	Adherent

Regulatory Data

Citation	SUM159PT (Cytion catalog number 305116)

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Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_5423

Biomolecular Data

Handling

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)
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
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.

Thawing and Culturing Cells	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. 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.
Incubation Atmosphere	37°C, 5% CO_2, humidified atmosphere.
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.
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.

Quality Control & Molecular Analysis

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.