Product sheet

T47D Cells | 300353

Información general

Description	The T47D cell line, originating from the pleural effusion of an infiltrating ductal carcinoma of the breast, has become a critical resource in breast cancer research. T-47D cells are unique in the realm of cancer research for their hormonal expression profile, particularly for carrying receptors for 17 beta estradiol, various other steroids, and calcitonin. Additionally, T47D cells express the WNT7B oncogene. T47D cells are notable for their progesterone receptor expression not being regulated by estradiol, despite the hormone's abundance within the cells, setting them apart from MCF7 cells, which are widely recognized for their estrogen receptor positivity and are frequently used to explore estrogen's role in tumor proliferation and response to therapies. The utility of the T47D cell line extends to the formation of xenografts in immunodeficient mice, which are valuable for drug testing, observing receptor status changes, and studying angiogenesis. Furthermore, the T-47D cell line is a resource for cancer gene studies, providing insights into the genomic and proteomic landscape that drives breast cancer. By facilitating a deeper understanding of the proteomic and transcriptomic profiles of breast cancer, the t47d breast cancer cell line aids in the identification of new breast cancer cell phenotypes and the development of targeted therapies. T47D cells have been instrumental in studying the effects of hormones like progesterone on breast cancer, offering insights into transcriptional regulation, drug resistance, and the development of xenograft models for therapeutic testing.
Organism	Human
Tissue	Breast
Disease	Invasive ductal carcinoma
Metastatic site	Pleural effusion
Synonyms	T-47-D, T47-D, T47D:A, T47D

Características

Age	54 years
Gender	Female
Ethnicity	Caucasian
Morphology	Epithelial-like

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Growth properties	Monolayer, adherent

Datos normativos

Citation	T47D (Cytion catalog number 300353)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_0553

Datos biomoleculares

Receptors expressed	Estradiol, steroids, calcitonin, androgen, progesterone, glucocorticoid, prolactin, estrogen
Isoenzymes	G6PD, B, PGM1, 1, PGM3, 1, ES-D, 2, Ak-1, 1, GLO-1, 1-2
Oncogenes	Wnt3 +, wnt7h +, wnt7b+
Tumorigenic	Yes, in nude mice
Mutational profile	TP53 mut
Karyotype	Mode = 66, dicentric and extra long submetacentric chromosomes

Manejo

Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Supplements	Supplement the medium with 10% FBS, 10 microgram/ml HREC insulin
Dissociation Reagent	Accutase

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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.
Seeding density	1×10^4 cells/cm^2
Fluid renewal	2 to 3 times per week
Post-Thaw Recovery	After thawing, plate the cells at 5×10^4 cells/cm^2 and allow the cells to recover from the freezing process and to adhere for at least 24 hours.
Freeze medium	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.

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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.

Control de calidad y análisis molecular

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.