Product sheet

SW620 Cells | 300466

General information

Description	The SW-620 cell line, originating from the large intestine of a 51-year-old male with Dukes-C colorectal cancer, is a pivotal research model in colorectal cancer, especially for cancer biomarkers, chemotherapy, and the study of metastatic cancer cells. SW-620 cells are pivotal for studying cell apoptosis and the resistance mechanisms to anoikis, a form of programmed cell death crucial for preventing metastasis. Research utilizing the SW-620 colon cancer cells has delved into proteomic analysis to understand proteome changes under different conditions, such as hypoxia. Hypoxic SW620 cells exhibit specific proteome adaptations that contribute to chemotherapy resistance. SW620 colon cancer cells have been pivotal in evaluating natural compounds like curcumin and their impact on cancer cell viability. Studies have shown that curcumin inhibits cell viability in SW-620 cells. Moreover, the cell line aids in assessing the effects of chemotherapeutic agents and the potential for chemotherapy resistance, which is critical for advancing cancer treatment strategies. Exhibiting high tumorigenic and metastatic capabilities, SW-620 cells form solid tumors in vivo. The SW620 xenograft model, alongside the study of specific pathways like the catenin pathway and the role of transcription factors such as cdx2 in colonic adenocarcinoma cells, enriches our understanding of colorectal cancer's molecular underpinnings. In summary, SW-620 human colon adenocarcinoma cells are an invaluable resource in cancer research, offering a multifaceted approach to understanding colorectal cancer's complexities.
Organism	Human
Tissue	Colorectal
Disease	Adenocarcinoma
Metastatic site	Lymph node
Synonyms	SW620, SW 620, SW.620

Characteristics

Age	51 years
Gender	Male
Ethnicity	Caucasian
Morphology	Epithelial-like

Growth properties	Adherent

Identifiers / Biosafety / Citation

Citation	SW-620 (Cytion catalog number 300466)
Biosafety level	1

Expression / Mutation

Tumorigenic	Yes, in athymic nude mice
Karyotype	Average number of chromosomes 48 (range, 46-52). Eighteen marker chromosomes. For a detailed description of the karyotype we refer to Melcher et al.

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
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 1:3 is recommended
Fluid renewal	2 times per week
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**: 13,14 **D13S317**: 12 **D16S539**: 9,13 **D5S818**: 13 **D7S820**: 8,9 **TH01**: 8 **TPOX**: 11 **vWA**: 16 **D3S1358**: 16 **D21S11**: 30,30.2 **D18S51**: 13 **Penta E**: 10 **Penta D**: 9,15 **D8S1179**: 13 **FGA**: 24 **D1S1656**: 13,14 **D6S1043**: 11,12 **D2S1338**: 17,24 **D12S391**: 17 **D19S433**: 13
HLA alleles	**A***: 02:01:01, 24:02:01 **B***: 07:02:01, 15:18:01 **C***: 07:02:01, 07:04:01 **DRB1***: 01:03:01, 13:01:01 **DQA1***: 01:01:01, 01:03:01 **DQB1***: 05:01:01, 06:03:01 **DPB1***: 01:01:01, 04:01:01 **E**: 01:01, 01:03