

**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.

<b>Organism</b>	Human
<b>Tissue</b>	Colorectal
<b>Disease</b>	Adenocarcinoma
<b>Metastatic site</b>	Lymph node
<b>Synonyms</b>	SW620, SW 620, SW.620

**Characteristics**

<b>Age</b>	51 years
<b>Gender</b>	Male
<b>Ethnicity</b>	Caucasian
<b>Morphology</b>	Epithelial-like

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**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 NaHCO<sub>3</sub>, 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)

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**Handling of cryopreserved cultures**

SW-620 cells are shipped in a deep-frozen state on dry ice. Upon receipt, confirm that the vial remains frozen. For storage, place the cryovial immediately at temperatures below -150 degrees. If you plan to culture the cells immediately, swiftly thaw the vial by shaking it in a 37 degrees water bath with clean water and an antimicrobial agent for 40-60 seconds. Remove the vial once a small ice clump persists, ensuring it remains cold. Proceed with all subsequent steps under aseptic conditions. In a sterile flow hood, disinfect the cryovial with 70% ethanol. Then, gently open the vial and transfer the cell suspension into a 15 ml centrifuge tube pre-filled with 8 ml of room temperature culture medium. Gently mix the cells. For cell separation, centrifuge at 300 x g for 3 minutes and dispose of the supernatant. Skipping centrifugation is optional, although any residual freezing medium should be removed after 24 hours. Resuspend the pellet gently in 10 ml of fresh culture medium and divide between two T25 culture flasks. Follow the subculture protocol for subsequent steps.

**Quality control / Genetic profile / HLA**

**Sterility**

Mycoplasma contamination is rigorously 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.

**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