

B-CPAP Cells | 305081**General information****Description**

B-CPAP is a human papillary thyroid carcinoma cell line that was established from the primary tumor of a 74-year-old woman. The cell line exhibits epithelial-like morphology and is commonly used in research to study thyroid cancer biology, including mechanisms of tumorigenesis and metastasis. B-CPAP cells are notable for harboring a BRAF V600E mutation, which is a common genetic alteration associated with aggressive thyroid cancers and serves as a critical model for evaluating BRAF inhibitors as therapeutic agents.

In addition to the BRAF mutation, B-CPAP cells express thyroid-specific markers such as thyroglobulin and thyroid-stimulating hormone receptor, making them a valuable model for studying thyroid gland function and pathology. They have been extensively used in studies investigating the signaling pathways involved in thyroid cancer progression, including MAPK/ERK pathway activation. These cells are also employed in drug resistance and apoptosis studies, providing insights into the mechanisms that might underpin therapeutic failures in thyroid cancer treatments.

Organism

Human

Tissue

Thyroid

Disease

Thyroid carcinoma

Synonyms

BC-PAP, BCPAP

Characteristics**Age**

76 years

Gender

Female

Ethnicity

European

Morphology

Epithelial

Growth properties

Adherent

Identifiers / Biosafety / Citation**Citation**

B-CPAP (Cytion catalog number 305081)

Biosafety level

1

B-CPAP Cells | 305081**Expression / Mutation****Handling****Culture Medium**RPMI 1640, w: 2.1 mM stable Glutamine, w: 2.0 g/L NaHCO₃ (Cytion article number 820700a)**Medium supplements**

Supplement the medium with 10% FBS

Passaging solution

Accutase

Doubling time

30 hours

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

1:2 to 1:5

Fluid renewal

2 to 3 times per week

Freeze medium

CM-1 (Cytion catalog number 800100)

B-CPAP Cells | 305081

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.
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.

B-CPAP Cells | 305081

STR profile

Amelogenin: x,x
CSF1PO: 13
D13S317: 12
D16S539: 11,12
D5S818: 10,11
D7S820: 10
TH01: 6,9.3
TPOX: 8,11
vWA: 14,17
D3S1358: 16,17
D21S11: 30,31.2
D18S51: 13,17
Penta E: 5,12
Penta D: 10,11
D8S1179: 12,13
FGA: 20,23
D6S1043: 12,19
D2S1338: 18
D12S391: 18,23
D19S433: 13.2,15