

## BHT101 Cells | 305112

### General information

#### Description

The BHT101 cell line is derived from the lymph node metastasis of a 63-year-old woman diagnosed with anaplastic papillary thyroid carcinoma. This cell line is established from a highly aggressive and lethal form of thyroid cancer, known for its rapid progression and poor prognosis. BHT101 cells are notable for their lack of hormone production, which is typical for cells originating from anaplastic thyroid carcinoma, as these cells often lose the ability to synthesize thyroid hormones that are characteristic of more differentiated thyroid tissues.

In terms of biomarker expression, BHT101 cells are partially positive for thyroglobulin and thyroxine (T4). Thyroglobulin is a precursor glycoprotein critical for the production of the thyroid hormones T3 and T4 and is commonly used as a tumor marker in differentiating thyroid cancer types. The presence of thyroglobulin in BHT101 cells, even if only partial, is significant for research focused on thyroid cancer pathology and the molecular mechanisms underlying dedifferentiation in thyroid carcinomas. This cell line's unique profile makes it a valuable model for studying the progression and metastatic behavior of anaplastic thyroid carcinoma, providing insights into the molecular alterations that drive these processes.

#### Organism

Human

#### Tissue

Thyroid

#### Disease

Anaplastic thyroid carcinoma

#### Metastatic site

Lymph node

#### Synonyms

BHT-101

### Characteristics

#### Age

63 years

#### Gender

Female

#### Ethnicity

European

#### Morphology

Epithelial

#### Growth properties

Adherent

### Identifiers / Biosafety / Citation

#### Citation

BHT101 (Cytion catalog number 305112)

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**Biosafety level** 1

### Expression / Mutation

### Handling

<b>Culture Medium</b>	MEM (We do not supply this product; please consider other suppliers. Please let us know if you need further assistance)
<b>Medium supplements</b>	Supplement the medium with 20% heat-inactivated FBS, 5 microgram/mL human insulin, 0.005 IU/mL TSH (from Scrippslabs) - Add the required TSH just before use and sterile filter into the medium
<b>Passaging solution</b>	Accutase
<b>Subculturing</b>	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.
<b>Split ratio</b>	1:2 to 1:5
<b>Fluid renewal</b>	2 to 3 times per week
<b>Freeze medium</b>	CM-1 (Cytion catalog number 800100)

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### 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  $-150^{\circ}\text{C}$  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  $37^{\circ}\text{C}$  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  $300 \times g$  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.