**Product sheet**

# TTA1 Cells | 305138

## General information

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|---|---|
| **Description** | The TTA-1 cell line is derived from an undifferentiated thyroid carcinoma, also known as anaplastic thyroid carcinoma (ATC). This cell line exhibits the highly aggressive characteristics associated with ATC, including rapid proliferation and resistance to conventional therapies. Cytogenetic analysis of TTA-1 cells revealed extensive chromosomal abnormalities, with a modal chromosome number of 56?59 and numerous structural rearrangements. These features highlight the genetic instability typical of ATC.<br><br>TTA-1 cells have been utilized extensively in research on tumorigenicity and oncogenesis. Studies have shown that tumorigenicity of TTA-1 cells can be modulated by genetic interventions, such as the introduction of chromosome 11 through microcell-mediated chromosome transfer. The addition of this chromosome led to partial suppression of tumorigenic properties, suggesting the presence of tumor suppressor genes on chromosome 11. Such studies provide insights into potential genetic therapeutic approaches to ATC.<br><br>TTA-1 cells are known to secrete cytokines such as interleukin-6 (IL-6), which is implicated in cancer progression and the inflammatory responses associated with ATC. The production of cytokines by TTA-1 cells reflects their role in mediating tumor microenvironment interactions, making them a valuable model for studying both ATC biology and therapeutic resistance. |
| **Organism** | Human |
| **Tissue** | Thyroid gland |
| **Disease** | Thyroid gland anaplastic carcinoma |
| **Synonyms** | TTA1, TTA-I |

## Characteristics

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|---|---|
| **Age** | 64 years |
| **Gender** | Male |
| **Morphology** | Epithelial |
| **Growth properties** | Adherent |

## Identifiers / Biosafety / Citation

| | |
|---|---|
| **Citation** | TTA1 (Cytion catalog number 305138) |

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|---|---|
| **Biosafety level** | 1 |

## Expression / Mutation

| | |
|---|---|
| **Tumorigenic** | Yes |

## Handling

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|---|---|
| **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 |
| **Doubling time** | 28.8 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** | 1:3 to 1:5 |
| **Freeze medium** | CM-1 (Cytion catalog number 800100) |

**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.

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**STR profile**

**Amelogenin**: x,x
**CSF1PO**: 10,11
**D13S317**: 12
**D16S539**: 9,1
**D5S818**: 12,13
**D7S820**: 11,12
**TH01**: 6
**TPOX**: 11
**vWA**: 17
**D3S1358**: 15
**D21S11**: 30
**D18S51**: 15
**Penta E**: 10
**Penta D**: 13
**D8S1179**: 13,15
**FGA**: 23
**D6S1043**: 14
**D2S1338**: 24
**D12S391**: 18
**D19S433**: 14