CADO-ES1

300127

GENERAL INFORMATION

Description

The CADO-ES1 cell line was established from a malignant pleural effusion taken from a 19-year-old female patient diagnosed with Ewing's sarcoma, primarily located in the right buttock with multiple lung metastases. This cell line provides a valuable tool for research in sarcoma biology, particularly in studying the metastatic processes associated with Ewing's sarcoma. As a disease primarily affecting children and young adults, Ewing's sarcoma is characterized by small round cells that are highly malignant, often exhibiting aggressive behavior and poor prognosis, particularly when metastatic.

Uniquely, CADO-ES1 cells exhibit several critical features valuable for in-depth cancer research. They are heterotransplantable, meaning they can be transplanted into a different species (e.g., mice), which is vital for in vivo studies. This capacity makes them a robust model for studying tumor growth and metastasis in a controlled, yet biologically relevant system. Additionally, these cells have shown the ability to grow independently of anchorage, a characteristic typical of many cancerous cells which allows them to thrive without adhering to the extracellular matrix. Furthermore, CADO-ES1 cells can differentiate neurally in response to cyclic AMP (cAMP), providing a unique perspective into the cellular behaviors influenced by signaling pathways in cancer progression and differentiation.

This combination of features makes CADO-ES1 a significant model for not only understanding the pathology of Ewing's sarcoma but also for the development and testing of targeted therapies that might inhibit the growth and spread of similar cancers. Research utilizing this cell line can contribute to a deeper understanding of cancer cell behavior, metastatic mechanisms, and potential therapeutic targets in sarcomas.

Tissue	Bone
Disease	Ewing's Sarcoma

Synonyms

- CADO-ES-1
- CADO ES1
- CADOES1
- CADO-ES
- Cado-ES
- ESCADO1
- Center for Adult Diseases Osaka-Ewing Sarcoma 1

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Small round cells

IDENTIFIERS

Citation

CADO-ES1 (Cytion catalog number 300127)

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BIC: SOLADES1HDB

NCBI TaxID	9606
Cellosaurus	CVCL_1103

EXPRESSION AND SUSCEPTIBILITY

Receptors expressed

CD99 (Eun Jung Lee, 2003)

HANDLING AND CULTURE

Culture medium

RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% heat-inactivated FBS

Dissociation reagent	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.

Fluid renewal	Every 3 to 4 days
Post-thaw recovery	After thawing, plate the cells at 5 x 10^4 cells/cm^2 and allow the cells to recover from the freezing process and to adhere for at least 24 hours.

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

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.

Freeze medium	As a cryopreservation medium, we use complete growth medium (including FBS) + 10% DMSO for adequate post-thaw viability, or CM-1 (Cytion catalog number 800100), which includes optimized osmoprotectants and metabolic stabilizers to enhance recovery and reduce cryo-induced stress.

Storage conditions

For long-term preservation, place vials in vapor-phase liquid nitrogen at about −150 to −196 °C. Storage at −80 °C is acceptable only as a short interim step before transfer to liquid nitrogen.

Shipping conditions

Cryopreserved cell lines are shipped on dry ice in validated, insulated packaging with sufficient refrigerant to maintain approximately −78 °C throughout transit. On receipt, inspect the container immediately and transfer vials without delay to appropriate storage.

DONOR

Donor age	19 years
Ethnicity	Japanese

LEGAL AND SAFETY

Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Material Transfer Agreement required	Yes