Product sheet

GCT Cells | 300155

General information

Description	The GCT cell line, originating from a giant cell tumor (GCT) isolated from the lung of an adult male patient with fibrous histiocytoma, is renowned for its robust biological activity in the field of medical research. This line produces Colony Stimulating Activity (CSA) for human granulocyte precursors and Erythropoietin-like Erythroid Activity (EEA) for erythroid precursors, making it invaluable for studying the regulation and development of hematopoietic cells. The granulocyte and erythroid precursors targeted by the GCT cell line's products are key to understanding processes like neutrophil function in the immune response and red blood cell formation, respectively. Additionally, the medium conditioned by this cell line is a significant source of prostaglandin E and plasminogen activator. These substances have crucial roles in inflammatory responses and the fibrinolytic pathway, respectively. Prostaglandin E is essential for inflammatory modulation and maintaining physiological balance, while plasminogen activator contributes to the dissolution of blood clots. The presence of these factors in the GCT cell line's conditioned medium underscores its potential for developing therapeutic strategies addressing cardiovascular diseases and conditions related to excessive clot formation and inflammation.
Organism	Human
Tissue	Lung
Disease	Undifferentiated pleomorphic sarcoma
Metastatic site	Pleural effusion
Synonyms	Giant Cell Tumor

Characteristics

Age	29 years
Gender	Male
Growth properties	Adherent

Regulatory Data

Citation	GCT (Cytion catalog number 300155)
Biosafety level	1

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NCBI_TaxID	9606
CellosaurusAccession	CVCL_1229

Biomolecular Data

Handling

Culture Medium	McCoys 5a, w: 3.0 g/L Glucose, w: stable Glutamine, w: 2.0 mM Sodium pyruvate, w: 2.2 g/L NaHCO3 (Cytion article number 820200a)
Supplements	Supplement the medium with 10% 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.
Seeding density	1 to 2 x 10^4 cells/cm^2
Fluid renewal	2 to 3 times per week
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.
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.

Thawing and Culturing Cells	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.
Incubation Atmosphere	37°C, 5% CO_2, humidified atmosphere.
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.
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.

Quality Control & Molecular Analysis

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.