

A204 Cells | 300109**General information**

Description	A204 cells are human epithelial cells derived from the muscles of a 1-year-old female patient with rhabdomyosarcoma. With applications in 3D cell culture and tumorigenic properties, A-204 cells provide an opportunity for studying tumour biology and potential therapeutic interventions. Derived from muscle tissue, A-204 cells closely resemble the outer layer of cells found in organs and tissues. A-204 cells exhibit adherent growth, have an epithelial morphology and have a karyotype characterized by diploidy and tetraploidy. Furthermore, these cells have demonstrated tumorigenicity, forming malignant tumours consistent with embryonal rhabdomyosarcoma in mice, validating their relevance in cancer research. The presence of specific isoenzymes, including AK-1, ES-D, G6PD, GLO-I, Me-2, PGM1, and PGM3, in A-204 cells provides insight into their metabolic characteristics. These isoenzymes may play a role in understanding cellular processes involved in cancer progression and treatment response. With a doubling time of approximately 36 hours, A-204 cells exhibit rapid proliferation, allowing efficient experimentation and ensuring an ample supply of cells for research applications.
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Organism	Human
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Tissue	Muscle
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Disease	Rhabdomyosarcoma
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Synonyms	A-204
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Characteristics

Age	1 year
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Gender	Female
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Morphology	Epithelial-like
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Growth properties	Adherent
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Identifiers / Biosafety / Citation

Citation	A204 (Cytion catalog number 300109)
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Biosafety level	1
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Expression / Mutation

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Isoenzymes	PGM3, 1, PGM1, 1, ES-D, 1, Me-2, 1, AK-1, 1, GLO-1, 1, G6PD, B
Tumorigenic	In nude mice. Forms small malignant tumors which are conform to embryonal rhabdomyosarcoma.
Ploidy status	Diploid and tetraploid

Handling

Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 1.5 g/L NaHCO ₃ , w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
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Medium supplements	Supplement the medium with 10% FBS
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Passaging solution	Accutase
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Doubling time	26 to 36 hours
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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.
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Split ratio	A ratio of 1:6 to 1:10 is recommended
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Seeding density	0.5 to 1 x 10 ⁴ cells/cm ²
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Fluid renewal	2 to 3 times per week
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Freezing recovery	After thawing, plate the cells at 2 x 10 ⁴ cells/cm ² and allow the cells to recover from the freezing process and to adhere for at least 24 to 48 hours.
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Freeze medium	CM-1 (Cytion catalog number 800100) or CM-ACF (Cytion catalog number 806100)
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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°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. Optionally, skip centrifugation but remove any remaining freezing medium after 24 hours.
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: 10,13
D13S317: 11,12
D16S539: 11,12
D5S818: 12
D7S820: 8,1
TH01: 8,9,3
TPOX: 8,9
vWA: 15,17
D3S1358: 14,17
D21S11: 28,3
D18S51: 17,18
Penta E: 7,1
Penta D: 9,12
D8S1179: 13,15
FGA: 21