Product sheet

MCA-205 Cells | 305730

Description	MCA-205 is a murine fibrosarcoma cell line derived from C57BL/6 mice. It was originally established through methylcholanthrene-induced tumorigenesis, a classic chemical carcinogenesis approach widely used to generate transplantable tumor models in syngeneic mice. MCA-205 serves as an immunocompetent tumor model, meaning it can be implanted into immunocompetent C57BL/6 mice without rejection, making it highly suitable for preclinical studies of cancer immunotherapy and tumor immunology. Biologically, MCA-205 tumors are classified as non-immunogenic or poorly immunogenic, a characteristic that reflects their low baseline antigenicity and reduced susceptibility to spontaneous immune-mediated rejection. This feature is particularly useful for evaluating the efficacy of checkpoint blockade therapies (such as anti-PD-1 or anti-CTLA-4) or tumor vaccines under conditions that mirror the immune-evasive nature of many human cancers. Despite their poor intrinsic immunogenicity, MCA-205 tumors can respond to immune modulation when combined with radiation therapy, oncolytic viruses, or TLR agonists, making them a versatile platform for combinatorial treatment testing. MCA-205 cells grow rapidly both in vitro and in vivo, forming aggressive fibrosarcomas when injected subcutaneously. These tumors have a high degree of vascularization and support reproducible tumor growth kinetics, allowing for consistent measurement of tumor burden and treatment response. Due to their murine origin and syngeneicity with C57BL/6 mice, MCA-205 cells are not appropriate for human-specific assays but are indispensable for exploring immune mechanisms in a fully functional host immune system.
Organism	Mouse
Disease	Mouse fibrosarcoma
Synonyms	MCA 205, MCA205
Growth properties	Adherent
Citation	MCA-205 (Cytion catalog number 305730)
Biosafety level	1
NCBI_TaxID	10090
CellosaurusAccession	CVCL_VR90

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Mutational profile	
Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Supplements	Supplement the medium with 10% FBS and 1% NEAA
Dissociation Reagent	Accutase
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.

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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.

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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.