Product sheet

MDA-MB-436 Cells | 300278

General information

Description	The MDA-MB-436 cell line is derived from a human breast adenocarcinoma. This cell line is characterized by its triple-negative breast cancer (TNBC) phenotype, lacking estrogen receptor (ER), progesterone receptor (PR), and human epidermal growth factor receptor 2 (HER2) expression. Such characteristics make it an invaluable model for studying TNBC, a particularly aggressive and difficult-to-treat subtype of breast cancer. The cells exhibit an epithelial morphology and are known for their robust proliferative capacity in vitro. Genetically, MDA-MB-436 cells harbor mutations in key cancer-related genes, including BRCA1 and TP53. The BRCA1 mutation is of particular interest, as it mirrors the genetic alterations found in a subset of hereditary breast cancers. This makes MDA-MB-436 a crucial tool for investigating the mechanisms underlying BRCA1-associated tumorigenesis and for testing potential therapeutic strategies targeting these pathways. Additionally, the cell line has been employed in research focused on chemotherapy resistance, metastasis, and the tumor microenvironment. Researchers working with MDA-MB-436 cells benefit from its well-documented characteristics, allowing for reproducible and reliable experimental outcomes. Studies utilizing this cell line contribute significantly to the understanding of TNBC biology and the development of novel treatments for this challenging cancer subtype. However, care must be taken in experimental design, as the absence of hormone receptors and HER2 expression necessitates alternative approaches compared to other breast cancer models.
Organism	Human
Tissue	Breast
Disease	Carcinoma
Metastatic site	Pleural effusion
Synonyms	MDA_MB_436, MDA MB 436, MDA-Mb-436, MDA-MB436, MDAMB436, MDA-436, MDA436, MB436, MD Anderson-Metastatic Breast-436

Characteristics

Age	43 years
Gender	Female
Ethnicity	European
Morphology	Pleomorphic and multinucleated cells

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Growth properties	Adherent

Regulatory Data

Citation	MDA-MB-436 (Cytion catalog number 300278)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_0623

Biomolecular Data

Handling

Culture Medium	DMEM:Ham's F12 (1:1), w: 3.1 g/L Glucose, w: 2.5 mM L-Glutamine, w: 15 mM HEPES, w: 0.5 mM Sodium pyruvate, w: 1.2 g/L NaHCO3 (Cytion article number 820400a)
Supplements	Supplement the medium with 5% 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	2 to 3 times per week
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.

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.