**Product sheet**

# MDA-MB-415 Cells | 305129

## General information

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| **Description** | The MDA-MB-415 cell line is derived from a metastatic site of an adult female patient with breast adenocarcinoma. These cells are epithelial in nature and exhibit characteristics typical of mammary gland epithelial cells. They are known for their utility in studying the molecular and cellular mechanisms underlying breast cancer, including hormone receptor activity and gene expression profiles. The MDA-MB-415 cell line is estrogen receptor-positive (ER+) and HER2 negative, making it particularly valuable for research focused on hormone-responsive breast cancers. Researchers utilize these cells to investigate the role of estrogen signaling in breast cancer progression and to evaluate the efficacy of anti-estrogen therapies.<br><br>In terms of growth characteristics, MDA-MB-415 cells grow as adherent monolayers and require a nutrient-rich culture medium to maintain optimal growth and viability. These cells exhibit a moderate doubling time, which makes them suitable for various in vitro assays, including proliferation, apoptosis, and drug sensitivity studies. The genetic profile of MDA-MB-415 cells has been extensively characterized, revealing key mutations and gene expression patterns that are relevant to breast cancer biology. This cell line serves as a critical model for understanding the complex interactions between cancer cells and their microenvironment, aiding in the development of novel therapeutic strategies. |
| **Organism** | Human |
| **Tissue** | Mammary gland, breast |
| **Disease** | Adenocarcinoma |
| **Metastatic site** | Pleural effusion |
| **Synonyms** | MDA-MB415, MDAMB415, MDA-415, MDA415, MD Anderson-Metastatic Breast-415 |

## Characteristics

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| **Age** | 38 years |
| **Gender** | Female |
| **Ethnicity** | European |
| **Morphology** | Epithelial |
| **Growth properties** | Adherent |

## Regulatory Data

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| **Citation** | MDA-MB-415 (Cytion catalog number 305129) |
| **Biosafety level** | 1 |
| **NCBI_TaxID** | 9606 |
| **CellosaurusAccession** | CVCL_0621 |

## Biomolecular Data

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| **Protein expression** | Amelogenin(x Chromosome)(Amelex) |
| **Antigen expression** | Blood Type O |
| **Tumorigenic** | No |

## Handling

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| **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 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. |
| **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.<br>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.<br>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.<br>4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.<br>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.<br>6. Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.<br>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.<br>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

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| **Sterility** | Mycoplasma contamination is excluded using both PCR-based assays and luminescence-based mycoplasma detection methods.<br><br>To ensure there is no bacterial, fungal, or yeast contamination, cell cultures are subjected to daily visual inspections. |