MDA-kb2

305108

GENERAL INFORMATION

Description

The MDA-kb2 cell line is a human breast cancer cell line derived from an adult patient. These cells are estrogen receptor (ER) negative and androgen receptor (AR) positive, making them valuable for studies involving androgen signaling pathways and their implications in breast cancer. The MDA-kb2 cell line was derived from the breast cancer cell line, MDA-MB-453, by stable transfection with a mouse mammary tumor virus (MMTV)-Luc-neo reporter gene construct. This genetic modification allows for the use of MDA-kb2 cells in bioassays for androgenic and anti-androgenic activities, where they are often utilized in-Luc reporter assays due to their stable transfection with a-Luc reporter gene under the control of an androgen-responsive promoter.
Due to their specific receptor profile, MDA-kb2 cells provide a crucial model for investigating the role of androgens in breast cancer progression and for testing the efficacy of potential therapeutic agents targeting AR pathways. These cells are cultured in Leibovitz's L-15 medium supplemented with 10% fetal bovine serum, under conditions that do not require CO_2 supplementation, which is an atypical characteristic compared to many other cell lines. The unique properties of MDA-kb2 cells make them an indispensable tool in both basic research and pharmaceutical development, particularly in understanding hormone receptor interactions in breast cancer.

Tissue	Breast, Mammary gland
Disease	Breast adenocarcinoma
Metastatic site	Pericardial effusion

Synonyms

- MDA-Kb2

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
GMO status	GMO-S1

GMO status details

GMO-S1: This human breast cancer reporter cell line (MDA-kb2) contains a firefly-Luc construct delivered via lentiviral vector under a hormone-responsive promoter, enabling glucocorticoid and androgen receptor assays. The insert is stably integrated. This classification applies only within Germany and may differ elsewhere.

Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial

IDENTIFIERS

Citation

MDA-kb2 (Cytion catalog number 305108)

NCBI TaxID	9606

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Cellosaurus	CVCL_6421

EXPRESSION AND SUSCEPTIBILITY

Protein expression

The cell line expresses firefly-Luc under control of the MMTV promoter that contains response elements for both glucocorticoid receptors (GR) and androgen receptors (AR)

HANDLING AND CULTURE

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)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

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

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit. 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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

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.

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.

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.

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.

DONOR

Donor age	48 years

LEGAL AND SAFETY

Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Material Transfer Agreement required	Yes