MFE-280

305587

GENERAL INFORMATION

Description

The MFE-280 cell line is a human-derived endometrial adenocarcinoma cell line, specifically representative of a poorly differentiated (Grade 3) endometrial carcinoma. This cell line is extensively used in gynecological cancer research to model the behavior of aggressive endometrial cancers, particularly those associated with poor prognosis. MFE-280 cells exhibit low or undetectable expression of estrogen receptor (ER) isoforms, distinguishing them from less aggressive endometrial cancer cell lines, such as Ishikawa cells. This feature makes them an ideal model for studying ER-independent mechanisms of endometrial cancer progression.
These cells are utilized to explore the role of molecular and cellular pathways involved in cancer proliferation, invasion, and metastasis. For example, MFE-280 cells have been used to evaluate the effects of leptin, a hormone linked to obesity, which is a significant risk factor for endometrial cancer. Leptin promotes epithelial-mesenchymal transition (EMT) and enhances proliferation and invasion in MFE-280 cells through activation of the JAK2/STAT3 signaling pathway, underscoring its importance in endometrial cancer pathogenesis. Additionally, pharmacological inhibitors targeting aquaporin-1 (AQP1) ion channels have demonstrated effectiveness in reducing the invasive potential of MFE-280 cells, highlighting potential therapeutic approaches for aggressive endometrial cancers.
Therapeutic research employing MFE-280 cells has also examined selective Liver X receptor (LXR) agonists, such as GW3965, which have been shown to significantly reduce the proliferation of these cells. This aligns with their utility in identifying novel drug targets and evaluating therapeutic compounds aimed at advanced and treatment-resistant endometrial cancers. The MFE-280 cell line continues to be a valuable resource for dissecting the mechanisms underlying aggressive endometrial cancer and for advancing therapeutic strategies.

Tissue	Endometrium
Disease	Adenocarcinoma

Synonyms

- MFE 280
- MFE280

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like
Tumourigenic	Yes, in nude mice

IDENTIFIERS

Citation

MFE-280 (Cytion catalog number 305587)

NCBI TaxID	9606
Cellosaurus	CVCL_1405

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EXPRESSION AND SUSCEPTIBILITY

Receptors expressed

Progesterone

HANDLING AND CULTURE

Culture medium

Please mix EMEM and RPMI 1640 in a 50:50 ratio (Cytion article numbers 820100a and 820700a)

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

Supplements

Supplement the medium with 10% heat-inactivated FBS, 1% ITS (0.625 mg/mL human insulin, 0.625 mg/mL human transferrin, 0.625 microgram/mL sodium selenite, 0.535 mg/mL linoleic acid, 125 mg/mL BSA)

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 TrypLE Express, 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	1 to 2 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	77 years
Ethnicity	Caucasian

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

PRODUCT DETAILS

Composition table

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