Product sheet

MKN-45 Cells | 300489

General information

Description	The MKN-45 cell line is a human gastric cancer cell line, derived from the poorly differentiated adenocarcinoma of the stomach. These cells exhibit characteristics typical of gastric cancer, including rapid growth and a high degree of genetic instability. MKN-45 cells are commonly used in cancer research to study tumor biology, drug resistance mechanisms, and the molecular pathways involved in gastric cancer progression. Their ability to form tumors when xenografted into immunocompromised mice makes them a valuable model for in vivo studies. MKN-45 cells are epithelial in nature and grow as adherent cells in culture. They express various biomarkers relevant to gastric cancer, such as carcinoembryonic antigen (CEA) and E-cadherin, making them useful for diagnostic and therapeutic research. Additionally, MKN-45 cells are often utilized in the evaluation of chemotherapy drugs and targeted therapies due to their responsiveness to treatment and their ability to mimic the clinical behavior of human gastric tumors. Researchers also use this cell line to explore the effects of genetic modifications and to develop new therapeutic strategies aimed at improving patient outcomes in gastric cancer.
Organism	Human
Tissue	Stomach
Disease	Gastric adenocarcinoma
Metastatic site	Liver
Synonyms	MKN 45, MKN45

Characteristics

Age	62 years
Gender	Female
Ethnicity	Japanese
Growth properties	Adherent/suspension

Regulatory Data

Citation	MKN-45 (Cytion catalog number 300489)
Biosafety level	1

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NCBI_TaxID	9606
CellosaurusAccession	CVCL_0434

Biomolecular Data

Handling

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 20% heat-inactivated FBS
Dissociation Reagent	Accutase
Subculturing	Gather the suspension cells in a 15 ml tube and gently wash the adherent cells with PBS lacking calcium and magnesium (use 3-5 ml for T25 flasks and 5-10 ml for T75 flasks). Apply Accutase (1-2 ml for T25 flasks, 2.5 ml for T75 flasks) ensuring full coverage of the cell layer. Allow the cells to incubate at room temperature for 10 minutes. Following incubation, combine and centrifuge both the suspension and adherent cells. After centrifugation, carefully resuspend the cell pellet and transfer the cell suspension into new flasks containing fresh medium.
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.

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.