Product sheet

HC11 Cells | 305050

General information

Description	The HC11 cell line, a clone derived from the COMMA-1D parental cell line, is an epithelial cell line sourced from the mammary gland of a mid-pregnant BALB/c mouse. This particular clone was isolated through transfection and was subsequently selected for its ability to induce beta-casein protein in response to prolactin. As a model, HC11 is particularly noted for its responsiveness to prolactin and other lactogenic hormones like insulin and dexamethasone, which facilitate the production of milk proteins such as beta-casein. In terms of cellular behavior and characteristics, HC11 cells are capable of differentiation in culture conditions that do not require the addition of a complex extracellular matrix or co-culture with other cell types. This simplifies the use of HC11 cells in various experimental setups, focusing on the cellular mechanisms of mammary gland function and development. Notably, HC11 cells autonomously produce key extracellular matrix proteins, including laminin, which are crucial for their structure and function. The gene expression profile of HC11 cells varies with their differentiation state: undifferentiated cells express genes such as Lgals1, Ran, Jam-A, Bmpr1a, Nfkbiz, Trib 1, Rps21, and ler3, while differentiated cells express Id1, highlighting the dynamic changes in gene expression associated with mammary epithelial cell differentiation.
Organism	Mouse
Tissue	Mammary
Synonyms	HC-11, HC11 Mammary Epithelium

Characteristics

Breed/Subspecies	BALB/c
Age	1 year
Gender	Female
Morphology	Epithelial
Growth properties	Adherent

Regulatory Data

Citation	HC11 (Cytion catalog number 305050)
Biosafety level	1

HC11 Cells | 305050

NCBI_TaxID	10090
CellosaurusAccession	CVCL_0288

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 10% FBS
Dissociation Reagent	Accutase
Doubling time	50 to 80 hours
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.

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.