Product sheet

WB-F344 Cells | 305201

General information

Description	The WB-F344 rat liver epithelial cell line is a non-tumorigenic line extensively used in studies focusing on liver physiology, toxicology, and carcinogenesis. Originating from normal adult rat liver, these cells were initially derived to facilitate investigations into the mechanisms of liver regeneration and the bioactivation of chemical carcinogens in vitro. They are diploid, exhibiting stable karyotypic features that are characteristic of normal rat liver cells, making them a valuable model for genetic and cytological studies. WB-F344 cells are particularly noted for their ability to differentiate into bile duct-like structures in response to certain stimuli, which makes them an excellent tool for studying biliary epithelial function and pathology. Their robust response to growth factors and their ability to undergo oncogenic transformation under specific experimental conditions also provide a platform for exploring the molecular pathways involved in liver disease and cancer. Furthermore, these cells have been employed in studies assessing the hepatic toxicity of environmental and pharmaceutical compounds, providing critical insights into hepatocyte response to xenobiotic exposure. Due to their well-characterized nature and versatility in research applications, WB-F344 cells serve as a foundational model in hepatological research. Their use has contributed significantly to our understanding of liver biology, particularly in areas related to cell differentiation, carcinogenesis, and the hepatic response to injury and chemical insults.
Organism	Rat
Tissue	Liver
Synonyms	WB F344, WBF344

Characteristics

Breed/Subspecies	Fischer 344
Age	Adult
Gender	Male
Morphology	Epithelial
Growth properties	Adherent

Regulatory Data

Citation	WB-F344 (Cytion catalog number 305201)

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Biosafety level	1
NCBI_TaxID	10116
CellosaurusAccession	CVCL_9806

Biomolecular Data

Handling

Culture Medium	EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)
Supplements	Supplement the medium with 7% FBS and 1% NEAA
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.

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.