Product sheet

BRL Cells | 305193

General information

Description	The Buffalo Rat Liver (BRL) cell line, a spontaneously immortalized lineage from Buffalo rat liver tissue, holds significant value due to its retention of pluripotency and karyotypic normality akin to embryonic stem (ES) cells. BRL cells produce a conditioned medium (BRL-CM) that has a unique application in stem cell biology; it inhibits the differentiation of established embryonal carcinoma (EC) and ES cell lines. This property allows for the maintenance of these stem cells in an undifferentiated state without the need for feeder cells, although this support is only viable for a finite period, highlighting a limitation in the utility of BRL-CM in long-term stem cell culture. Furthermore, the BRL cell line provides an interesting model for studying the impact of genetic modifications on cell behavior, illustrated by the differential response of normal versus Ha-ras-1 transformed BRL cells to cytoskeletal inhibitors. Transformation with the Ha-ras-1 oncogene not only modifies cellular responses but also enhances the stability of microfilaments and microtubules, consequently altering the cell's structural integrity. These findings emphasize the potential role of the cytoskeleton in maintaining cell shape and pluripotency, which is pivotal in both normal physiology and disease states involving cellular transformation and differentiation.
Organism	Rat
Tissue	Liver
Synonyms	Buffalo Rat Liver

Characteristics

Morphology	Epithelial
Growth properties	Adherent

Identifiers / Biosafety / Citation

Citation	BRL (Cytion catalog number 305193)
Biosafety level	1

Expression / Mutation

Handling

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Culture Medium	EMEM, w: 2 mM L-Glutamine, w: 1.5 g/L NaHCO3, w: EBSS, w: 1 mM Sodium pyruvate, w: NEAA (Cytion article number 820100c)
Medium supplements	Supplement the medium with 10% FBS
Passaging solution	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.
Split ratio	1:2 to 1:4
Fluid renewal	2 to 3 times per week
Freeze medium	CM-1 (Cytion catalog number 800100)

Handling of cryopreserved cultures

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.

Quality control / Genetic profile / HLA

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.