Product sheet

WERI-Rb-1 Cells | 300632

General information

Description	The WERI-Rb-1 cell line is derived from a retinoblastoma, a rare malignant tumor of the retina that typically manifests in early childhood. This cell line was established to provide a consistent and replicable model for the study of retinoblastoma biology, offering insights into the genetic, molecular, and cellular mechanisms underlying this form of cancer. WERI-Rb-1 cells are particularly valued in oncological research for their utility in investigating the pathophysiological processes and potential therapeutic targets for retinoblastoma. WERI-Rb-1 cells exhibit characteristics typical of retinoblastoma, including the expression of neuronal markers and the capability to form cell aggregates resembling Flexner-Wintersteiner rosettes, a hallmark of retinoblastoma histology. These cells have been used extensively to study the role of oncogenes and tumor suppressor genes in cancer development, with a focus on the RB1 gene, mutations of which are pivotal in the etiology of retinoblastoma. Furthermore, WERI-Rb-1 serves as an important tool in the evaluation of chemotherapeutic agents and novel drug delivery systems aimed at improving treatment outcomes for retinoblastoma patients.
Organism	Human
Tissue	Eye
Disease	Retinoblastoma
Applications	3D cell culture
Synonyms	WERI-RB-1, WERI-Rb 1, WERI-Rb1, WERI-RB1, WERI Rb-1, WERIRb1, WERI, Wills Eye Research Institute-Retinoblastoma-1

Characteristics

Age	1 year
Gender	Female
Morphology	Round cells
Growth properties	Suspension

Identifiers / Biosafety / Citation

Citation	WERI-Rb-1 (Cytion catalog number 300632)

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Biosafety level	1

Expression / Mutation

Isoenzymes	ES-D, 1, G6PD, B, GLO-I, 2, Me-2, 1, PGM1, 1, PGM3, 0
Tumorigenic	Yes, in rabbits
Viruses	EBV -, HBV -, HCV -, HHV-8 -, HIV-1 -, HIV-2 -, HTLV-1/2 -, MLV -, SMRV -
Reverse transcriptase	Negative
Karyotype	human pseudodiploid karyotype with 3.9% polyploidy - 46(41-48)xx, +6, -10, -10, -14, -22, +3mar, add(3)(q25), add(3)(q25), add(4)(p15), add(5)(q35), i(6q), del(7)(p21), add(9)(q33), der(13)x2, add(16)(q23), add(16)(q23), i(17q), add(19)(q13) - apparently (uniparental?) disomic rearrangement of ch 13 - corresponds to reported karyotype

Handling

Culture Medium	RPMI 1640, w: 2.1 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Medium supplements	Supplement the medium with 10% FBS and 0.01 mg/mL insulin
Subculturing	Gently homogenize the cell suspension in the flask by pipetting up and down, then take a representative sample to determine the cell density per ml. Dilute the suspension to achieve a cell concentration of 1 x 10^5 cells/ml with fresh culture medium, and aliquot the adjusted suspension into new flasks for further cultivation.
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.