Product sheet

HBZY-1 Cells | 305206

General information

Description	HBZY-1 cells are primary cells isolated from the glomerulus of rat kidneys, specifically from mesangial cells. These cells are highly regarded in scientific research due to their origin and functionality. The glomerulus, a key structure in the kidney, is crucial for blood filtration and purification. Mesangial cells play a significant role in maintaining the structure and function of this specialized renal unit. Thus, HBZY-1 cells provide a valuable model for studying the intricacies of renal biology and advancing our understanding of kidney-related diseases. Employed in various scientific studies, HBZY-1 cells allow researchers to delve into mesangial cell function and the pathogenesis of kidney diseases. This makes them an essential tool for investigating cellular processes, signaling pathways, and molecular interactions that are pivotal in renal biology. Utilizing these cells in vitro offers insights into the molecular mechanisms governing mesangial cell behavior, enhancing our knowledge of their role in kidney function and disease. Furthermore, HBZY-1 cells are utilized in pathophysiological studies of kidney diseases, such as glomerulonephritis and diabetic nephropathy. These cells can be subjected to experimental conditions that mimic disease states, providing a platform to study the molecular events that contribute to renal pathology. This capacity makes HBZY-1 cells instrumental in drug discovery and the development of therapeutic interventions aimed at treating kidney-related disorders, potentially leading to significant advancements in patient care and treatment strategies.
Organism	Rat
Tissue	Kidney
Synonyms	HBZY 1, HBZY1

Characteristics

Morphology	Epithelial
Growth properties	Adherent

Regulatory Data

Citation	HBZY-1 (Cytion catalog number 305206)
Biosafety level	1
NCBI_TaxID	10116
CellosaurusAccession	CVCL_7213

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Biomolecular Data

Handling

Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 3.7 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
Supplements	Supplement the medium with 10% FBS
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

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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.