Product sheet

Beta-TC-6 Cells | 305181

General information

Description	Beta-TC-6 cells is a cell line derived from insulinoma tissue in mice. These cells are crucial in scientific studies focused on diabetes and insulin signalling. Originating from a transgenic mouse, Beta-TC-6 cells carry a pseudogene construct comprising the SV40 early region, which the rat insulin gene promoter regulates. This genetic composition leads to insulin secretion in response to glucose levels. These cells exhibit epithelial morphology and primarily reside in the pancreas tissue. In addition to insulin production, these cells possess small amounts of glucagon and somatostatin. The adherence of Beta-TC-6 cells allows for convenient cultivation and manipulation during experiments and assays. Beta-TC-6 cells provide a valuable tool for scientific investigations in diabetes and insulin signalling. Their unique genetic composition, insulin-secreting capabilities, and adherence properties make them ideal for studying the intricate processes involved in glucose regulation and pancreatic function.
Organism	Mouse
Tissue	Pancreas
Disease	Mouse insulinoma
Synonyms	beta-TC-6, beta-TC6, beta TC6, BetaTC6, betaTC6

Characteristics

Morphology	Epithelial
Growth properties	Adherent

Identifiers / Biosafety / Citation

Citation	Beta-TC-6 (Cytion catalog number 305181)
Biosafety level	1

Expression / Mutation

Handling

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Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 1.5 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
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.