Product sheet

CFSC-8B Cells | 305471

General information

Description	CFSC-8B is a clonal rat hepatic stellate cell (HSC) line derived from cirrhotic liver tissue and represents one of several subclones generated from spontaneously immortalized cirrhotic fat-storing cells (CFSC). The parental CFSC population was established from hepatic stellate cells isolated from male Wistar rats with carbon tetrachloride-induced liver cirrhosis. Following repeated passaging and gradient purification, individual clones were obtained by limiting dilution, among which CFSC-8B was selected and characterized as a stable, continuously proliferating line. As summarized in the section “NFSC, CFSC and derivatives” of the review (page 709), CFSC-8B belongs to a group of cirrhosis-derived stellate cell clones that exhibit pronounced clonal heterogeneity with respect to proliferation and extracellular matrix production :contentReference[oaicite:0]{index=0}. CFSC-8B displays a myofibroblast-like phenotype consistent with activated hepatic stellate cells. The cells are mononucleated with fusiform morphology and a cytoplasm rich in free ribosomes and abundant rough endoplasmic reticulum. They express desmin and vimentin and synthesize key extracellular matrix components including collagen types I and III, fibronectin, and laminin. Compared with stellate cell lines derived from normal liver (NFSC), cirrhosis-derived CFSC clones such as CFSC-8B contain fewer lipid droplets and exhibit a more pronounced fibrillar extracellular matrix phenotype. Functional analyses have demonstrated responsiveness to profibrogenic cytokines, including transforming growth factor-β, with induction of collagen gene expression, as well as regulation of tissue inhibitor of metalloproteinases-1 and other matrix-associated proteins. Due to its stable activated phenotype, robust extracellular matrix production, and cytokine responsiveness, CFSC-8B is widely used as an in vitro model of transdifferentiated hepatic stellate cells in the context of liver fibrosis. However, as discussed in the review, immortalized HSC lines including CFSC derivatives exhibit genotypic and phenotypic drift and do not fully recapitulate the dynamic quiescent-to-activated transition observed in primary stellate cells :contentReference[oaicite:1]{index=1}. Therefore, CFSC-8B is particularly suited for mechanistic studies of fibrogenic signaling, extracellular matrix regulation, and antifibrotic interventions under conditions modeling established stellate cell activation.
Organism	Rat
Tissue	Liver

Characteristics

Age	Adult
Gender	Male
Cell type	Hepatic stellate cell
Growth properties	Adherent

Regulatory Data

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Citation	CFSC-8B (Cytion catalog number 305471)
Biosafety level	1
NCBI_TaxID	10116
CellosaurusAccession	CVCL_4U37

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
Seeding density	1-3*10^4/cm^2
Freeze medium	As a cryopreservation medium, we use complete growth medium + 10% DMSO for adequate post-thaw viability.

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 200 x g for 5 minutes, carefully discard the supernatant containing freezing medium. 7. Follow the procedure described under Post-Thaw Recovery
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