# CFSC-8B

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.

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|---|---|
| **Tissue** | Liver |

## CLASSIFICATION

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| **Organism** | Rat |
| **Sex** | Male |
| **Growth properties** | Adherent |
| **Biosafety level** | 1 |

## CHARACTERISTICS

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| **Cell type** | Hepatic stellate cell |

## IDENTIFIERS

### Citation

CFSC-8B (Cytion catalog number 305471)

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|---|---|
| **NCBI TaxID** | 10116 |
| **Cellosaurus** | CVCL_4U37 |

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## HANDLING AND CULTURE

### 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)

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| **Incubation atmosphere** | 37°C, 5% $CO_2$, humidified atmosphere. |

### Supplements

Supplement the medium with 10% FBS

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| **Dissociation reagent** | Accutase |
| **Seeding density** | 1-3*10^4/cm² |

### Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 200 x g for 5 minutes, carefully discard the supernatant containing freezing medium.
Follow the procedure described under Post-Thaw Recovery

## QUALITY CONTROL AND CRYOPRESERVATION

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| **Freeze medium** | As a cryopreservation medium, we use complete growth medium + 10% DMSO for adequate post-thaw viability. |

### 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.

### 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.

## DONOR

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| **Donor age** | Adult |

## LEGAL AND SAFETY

### Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

### Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

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| **Material Transfer Agreement required** | Yes |

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