Human Gingival Fibroblasts (hGF)

300703

GENERAL INFORMATION

Description

Primary Human Gingival Fibroblasts (HGF) are isolated from the gingiva. They are used to study periodontitis and host–pathogen interaction and to test the biocompatibility of dental materials.
Beyond producing and remodeling extracellular matrix, gingival fibroblasts act as sentinel cells of the periodontium, responding to oral bacteria with cytokines, chemokines and other inflammatory mediators. This makes them the relevant fibroblast type for periodontal inflammation and for testing materials that contact the gingiva.

Tissue	Gingiva (oral mucosa)

Applications

Periodontitis: immune response to Porphyromonas gingivalis; 3D spheroid models for periodontal tissue regeneration; Cytotoxicity testing of dental products, including donor-age effects; Biocompatibility of gingival retraction agents (viability, oxidative stress); Tolerance testing of mouthwash formulations in a simulated rinsing model; In vitro cytotoxicity testing of medical devices

Synonyms

- HGF
- HFIB-G
- Human fibroblasts
- gingiva
- provitro 1210412

DONOR

Donor age	Lot-specific (see CoA)
Ethnicity	Lot-specific (see CoA)

CLASSIFICATION

Organism	Human
Sex	Lot-specific
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Spindle-shaped (fibroblast-like)
Cell type	Primary fibroblasts
Tumourigenic	No

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HANDLING AND CULTURE

Culture medium

Fibroblast Growth Medium kit (Cytion article number 850066); Fibroblast Growth Medium mix (Cytion article number 850065); Defined Fibroblast Maintenance Medium kit (Cytion article number 850072)

Incubation atmosphere	37°C, 5% CO_2, saturated humidity.

Supplements

Supplement the medium with 10% FBS, 10 ng/mL bFGF, 10 microgram/L Insulin

Dissociation reagent	Subculture reagents as recommended on the certificate of analysis

Subculturing

Subculture the cells at about 75 % confluence. Denser cultures undergo irreversible contact inhibition and stop proliferating. Use the subculture reagents recommended on the certificate of analysis.

Seeding density	More than 4,000 cells/cm²
Fluid renewal	24 hours after seeding, then every 48 to 72 hours
Post-thaw recovery	Post-thaw viability ≥ 70 % viable cells. More than 80 % confluence within the expected recovery period.

Thawing and culturing

Thaw the cryovial quickly in a 37 °C water bath, swirling gently. Just before the last ice has melted, move the vial to a laminar flow hood and decontaminate its outer surface.
Transfer the cell suspension into a 15 ml centrifuge tube, add 10 ml of Fibroblast Growth Medium and centrifuge at 250 × g for 5 minutes.
Remove the supernatant and resuspend the cell pellet in 10 ml of Fibroblast Growth Medium. Check cell number and viability.
Divide the suspension between two 25 cm² culture flasks (5 ml each). Using two flasks reduces the risk of losing all cells if a passage fails.
Incubate at 37 °C, 5 % CO_2 and saturated humidity, with the screw caps opened by half a turn for gas exchange.
Change the medium after 24 hours to remove unattached cells, then every 48 to 72 hours, using pre-warmed medium only.
Subculture the cells at about 75 % confluence. Denser cultures undergo irreversible contact inhibition and stop proliferating. Use the subculture reagents recommended on the certificate of analysis.
Recommended seeding density: more than 4,000 cells/cm².

QUALITY CONTROL AND CRYOPRESERVATION

Sterility

Mycoplasma contamination is excluded by PCR.
To ensure there is no bacterial, fungal or yeast contamination, cultures are subjected to visual inspection.

Freeze medium	As a cryopreservation medium, we use 90% FBS + 10% DMSO to maintain viability, or CM-1 (Cytion catalog number 800100), which includes optimized osmoprotectants and metabolic stabilizers to enhance recovery and reduce cryo-induced stress.

Storage conditions

For long-term preservation, store vials in liquid nitrogen at about −150 to −196 °C. Storage at −80 °C is acceptable for up to one week only.

Shipping conditions

Cryopreserved primary cells are shipped on dry ice. On receipt, check the cryovial for damage and transfer it without delay to appropriate storage.

IDENTIFIERS

Citation

Human Gingival Fibroblasts (hGF) (Cytion catalog number 300703)

NCBI TaxID	9606

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. Primary cells are of human origin, and no known test procedure can ensure the complete absence of infectious agents. Handle all products as potentially infectious.

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.

Material Transfer Agreement required	Yes

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