Product sheet

Juvenile Human Melanocytes | 300695

General information

Description	Juvenile Human Melanocytes is a human skin melanocyte preparation derived from the skin of juvenile donors (age range 1–17 years) and provided as a single-donor preparation. The cells exhibit the characteristic stellar or dendritic-shaped morphology of mature melanocytes, reflecting the branched cell processes through which melanin-containing melanosomes are transferred to neighboring keratinocytes in the epidermis. Melanocytes produce melanin pigments (eumelanin and pheomelanin) and are responsible for skin, hair, and eye pigmentation. Primary juvenile melanocytes retain normal pigmentation biology and are not immortalized or transformed. Juvenile Human Melanocytes are applicable in studies of melanocyte biology, melanogenesis, pigmentation regulation (via MC1R, MITF, tyrosinase), UV-induced melanin synthesis, and the paracrine interactions between melanocytes and keratinocytes in the epidermal-melanin unit. They are used in vitro to evaluate the effects of cosmetic actives, UV-filters, and depigmenting agents on melanin production, and in organotypic skin equivalent models for pigmentation research. The juvenile donor age provides high proliferative capacity compared to adult-derived melanocytes.
Organism	Human
Tissue	Skin
Disease	Normal juvenile skin melanocytes; non-tumorigenic
Metastatic site	Not applicable (normal melanocytes)
Applications	Melanocyte biology; melanogenesis; pigmentation regulation (MC1R/MITF/tyrosinase); UV-induced melanin synthesis; cosmetic/dermatological compound testing; depigmenting agent evaluation; organotypic skin pigmentation models

Characteristics

Age	1-17 years
Gender	Sex unspecified
Ethnicity	Unspecified
Morphology	Stellar or dendritic shaped
Cell type	Skin Melanocytes from single donor
Growth properties	Adherent

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Regulatory Data

Citation	Juvenile Human Melanocytes (Cytion catalog number 300695)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	Not assigned
GMO Status	No genetic modification; primary cell preparation

Biomolecular Data

Handling

Culture Medium	CTIGM.Melano : Growth Medium for Melanocytes
Supplements	Supplement as specified by CTIGM.Melano Growth Medium for Melanocytes
Dissociation Reagent	Accutase
Doubling time	approx. 36 to 48 hours
Subculturing	Remove medium, wash with PBS without calcium and magnesium, cover with Accutase, incubate 5–8 min at 37°C, resuspend in medium, centrifuge 300×g 3 min, discard supernatant, reseed at target density in fresh medium.
Split ratio	1 to 3
Seeding density	1 to 2 × 10^3 cells/cm^2
Fluid renewal	Every 2 to 3 days
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.

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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