# Menschliche Skelettmuskelzellen (HSKMC)

300689

## ALLGEMEINE INFORMATIONEN

### Beschreibung

Primary Human Skeletal Muscle Cells (SkMC) are isolated from skeletal muscle and differentiate into myotubes in serum-free Skeletal Muscle Cell Differentiation Medium. They are used to study insulin resistance, exercise physiology and drug effects in 3D muscle tissue.
In culture, the cells proliferate as myoblasts and fuse into multinucleated myotubes after switching to differentiation medium. Because they are not immortalized and retain the donor's human genetic background, they offer a physiologically relevant alternative to rodent cell lines, and their metabolic profile can be further matured, for example by electrical pulse stimulation.

| | |
|---|---|
| **Gewebe** | Skeletal muscle |
| **Krankheit** | Normal skeletal muscle (non-tumorigenic primary myoblasts) |
| **Metastasenherd** | Not applicable (normal, non-tumorigenic primary cell) |

### Anwendungen

Insulin resistance and type 2 diabetes (glucose uptake, insulin signaling); In vitro exercise model: electrical pulse stimulation, contraction, GLUT4 and oxidative metabolism; Muscle energy metabolism in obesity and type 2 diabetes using human myotubes; Fatty acid oxidation and mitochondrial biogenesis (PGC-1α); 3D engineered muscle (myobundles) for drug-induced mitochondrial toxicity

### Synonyme

- SkMC
- HSKMC
- Human skeletal muscle cells
- provitro 1210691

## SPENDER

| | |
|---|---|
| **Alter des Spenders** | Lot-specific (see CoA) |
| **Ethnische Zugehörigkeit** | Lot-specific (see CoA) |

## KLASSIFIZIERUNG

| | |
|---|---|
| **Organismus** | Mensch |
| **Sex** | Los-spezifisch |
| **Wachstumseigenschaften** | Anhänger |
| **GVO-Status** | Ohne Gentechnik |

### Angaben zum GVO-Status

No genetic modification; normal primary human skeletal muscle cells. Not transformed or immortalized.

| | |
|---|---|
| **Biologische Sicherheitsstufe** | 1 |

## MERKMALE

| | |
|---|---|
| **Morphologie** | Spindle-shaped myoblasts; multinucleated myotubes after differentiation |
| **Zelltyp** | Primary skeletal muscle cells (myoblasts) |

Cytion GmbH
Nikola-Tesla-Str. 3
69124 Heidelberg
Tel: +49 (0)6221 405780
info@cytion.com
cytion.com

Registered office Heidelberg
VAT ID: DE283292917
Local court Mannheim - HRB 714394
CEO / Geschäftsführer: Jonathan Steubing

Banking information
Sparkasse Heidelberg
IBAN: DE35 6725 0020 0009 2076 86
BIC: SOLADES1HDB

| | |
|---|---|
| **Tumorauslösend** | No |
| **Verdopplungszeit** | Lot-specific (refer to batch CoA) |

## HANDHABUNG UND KULTUR

**Nährmedium**

Skeletal Muscle Cell Growth Medium kit (Cytion article number 850082); Skeletal Muscle Cell Growth Medium mix (Cytion article number 850081); Skeletal Muscle Cell Differentiation Medium kit (Cytion article number 850087)

| | |
|---|---|
| **Inkubationsatmosphäre** | 37°C, 5% $CO_2$, saturated humidity. |

**Nahrungsergänzungsmittel**

Primary Skeletal Cell Muscle Growth Kit (ATCC PCS-950-040) pre-formulated into basal medium; no additional serum supplement required. For differentiation: PCS-950-050 standalone (no further supplements).

| | |
|---|---|
| **Dissoziationsreagenz** | Subculture reagents as recommended on the certificate of analysis |

**Subkultivierung**

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.

| | |
|---|---|
| **Split-Verhältnis** | 2,500 to 5,000 cells/cm² (ATCC recommended seeding density) |
| **Aussaatdichte** | More than 4,000 cells/cm² |
| **Flüssigkeitswechsel** | 24 hours after seeding, then every 48 to 72 hours |
| **Erholung nach dem Auftauen** | Post-thaw viability ≥ 70 % viable cells. More than 80 % confluence within the expected recovery period. |

**Auftauen und Kultivierung**

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 Skeletal Muscle Cell Growth Medium and centrifuge at 250 × g for 5 minutes.
Remove the supernatant and resuspend the cell pellet in 10 ml of Skeletal Muscle Cell 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.

## QUALITÄTSKONTROLLE UND KRYOKONSERVIERUNG

**Sterilität**

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

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

**Lagerbedingungen**

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.

**Versandbedingungen**

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

## EXPRESSION UND ANFÄLLIGKEIT

**Proteinexpression**

Desmin (+) in differentiated cells (confirmed by ATCC QC)

**Antigenexpression**

Von Willebrand Factor (vWF): negative (confirmed by ATCC QC)

**Viren**

HIV-1: Not detected; HIV-2: Not detected; HCV: Not detected; HBV: Not detected (ATCC QC, lot-specific)

## BEZEICHNER

**Quellenangabe**

Human skeletal muscle cells (HSKMC) (Cytion catalog number 300689)

| | |
|---|---|
| **NCBI-Steuer-ID** | 9606 |
| **Cellosaurus** | Not assigned |

## RECHTLICHES UND SICHERHEIT

**Sicherheitshinweise**

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.

**Garantie**

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.

| | |
|---|---|
| **Materialübertragungsvereinbarung erforderlich** | Yes |

Cytion GmbH
Nikola-Tesla-Str. 3
69124 Heidelberg
Tel: +49 (0)6221 405780
info@cytion.com
cytion.com

Registered office Heidelberg
VAT ID: DE283292917
Local court Mannheim - HRB 714394
CEO / Geschäftsführer: Jonathan Steubing

Banking information
Sparkasse Heidelberg
IBAN: DE35 6725 0020 0009 2076 86
BIC: SOLADES1HDB