خلايا العضلات الهيكلية البشرية (HSKMC)

300689

معلومات عامة

الوصف

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.

الأنسجة	Skeletal muscle
المرض	Normal skeletal muscle (non-tumorigenic primary myoblasts)
موقع الانتشار	Not applicable (normal, non-tumorigenic primary cell)

التطبيقات

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

المرادفات

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

المانح

عمر المتبرع	Lot-specific (see CoA)
الأصل العرقي	Lot-specific (see CoA)

التصنيف

كائن حي	إنسان
الجنس	خاص بالقطعة
خصائص النمو	الملتزم
حالة الكائنات المعدلة وراثيًا	خالية من الكائنات المعدلة وراثيًا

تفاصيل حالة الكائنات المعدلة وراثيًا

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

مستوى السلامة البيولوجية	1

الخصائص

المورفولوجيا	Spindle-shaped myoblasts; multinucleated myotubes after differentiation
نوع الخلية	Primary skeletal muscle cells (myoblasts)

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مُسبِّب للأورام	No
زمن المضاعفة	Lot-specific (refer to batch CoA)

التعامل مع النباتات وزراعتها

وسط الاستزراع

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)

بيئة الحضانة	37°C, 5% CO_2, saturated humidity.

المكملات الغذائية

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).

كاشف التفكك	Subculture reagents as recommended on the certificate of analysis

إعادة الاستنبات

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.

نسبة التقسيم	2,500 to 5,000 cells/cm² (ATCC recommended seeding density)
كثافة البذر	More than 4,000 cells/cm²
تجديد السوائل	24 hours after seeding, then every 48 to 72 hours
التعافي بعد ذوبان الجليد	Post-thaw viability ≥ 70 % viable cells. More than 80 % confluence within the expected recovery period.

إذابة الثلج والزراعة

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.

مراقبة الجودة والحفظ بالتبريد

العقم

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

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

شروط التخزين

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.

شروط الشحن

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

التعبير والقابلية للإصابة

التعبير البروتيني

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

التعبير عن المستضد

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

الفيروسات

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

المعرّفات

المرجع

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

NCBI رقم التعريف الضريبي لدى	9606
سيلوصور	Not assigned

الشؤون القانونية والسلامة

احتياطات السلامة

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.

الضمان

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.

يلزم إبرام اتفاقية نقل المواد	Yes