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IMMORTALIZED CELL LINES

IMMORTALIZED HUMAN SKELETAL MUSCLE MYOBLASTS

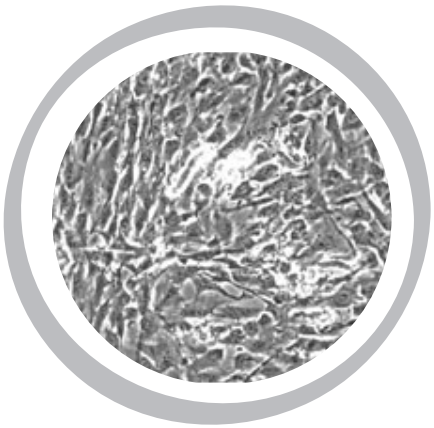
P10977-IM

Human skeletal muscle myoblasts (HSMM) are precursor cells derived from human skeletal muscle tissue, essential for muscle growth, repair, and regeneration. These cells have the capacity to proliferate and differentiate into mature skeletal muscle fibers, making them a valuable tool for studying muscle development and related diseases such as muscular dystrophy, sarcopenia, and metabolic disorders like insulin resistance.

HSMM are widely used in research areas such as drug testing, toxicity studies, and the development of therapeutic strategies for muscle-related conditions. They provide a reliable in vitro model for advancing our understanding of skeletal muscle biology and exploring potential regenerative.

Should you require further elucidation or have specific inquiries, please do not hesitate to express them.

Product Type: Immortalized Human Skeletal Muscle Myoblasts
Catalog Number: P10977-IM
Immortalization: SV40 Large T Antigen. G418 resistant.
Number of cells: >1x10^6 cells (cryopreserved vials)
Storage: Liquid Nitrogen
Source: Human Muscle pectoral girdle
Recommended Medium: Skeletal Muscle Cell Medium (Reference: P60124).
Product Characterization: Immunofluorescent method for CD-56 and Myosin. Tubulization assay.



About Immortalized Human Skeletal Muscle Myoblasts

The immortalized human skeletal muscle myoblasts cell line has been developed through genetic modification of primary human preadipocytes cells, employing the SV40LT protein as the immortalization method. The SV40LT protein, derived from the Simian Virus 40 Large T-antigen, has been introduced to confer immortality to the cells, allowing for an extended lifespan compared to primary cells that typically undergo senescence after a limited number of passages. The use of SV40LT for immortalization is a common technique in cell biology and allows for the establishment of cell lines with a more stable and prolonged growth capacity. This modification enables researchers to conduct long-term experiments and studies that require consistent cellular behavior over an extended period. Primary cells exhibit senescence following the 5th passage, whereas the SV40LT-transduced cells demonstrate a prolonged viability, extending beyond 20 passages.

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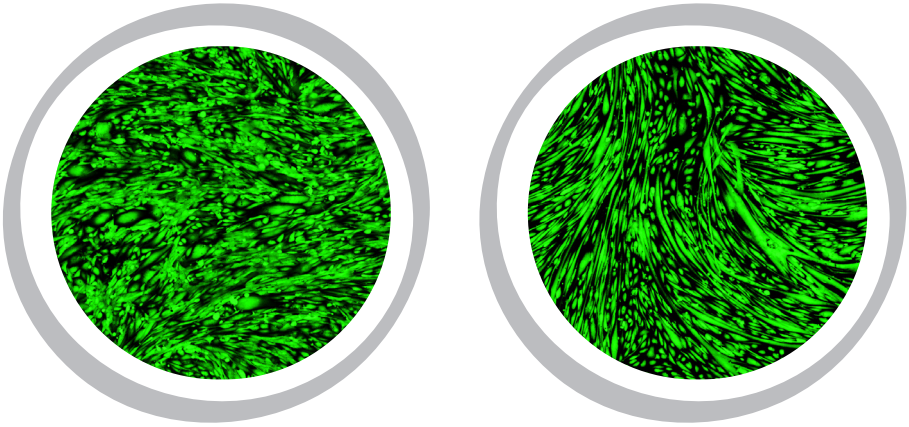
Lipid staining after differentiation.

Human immortalized skeletal muscle myoblasts were seeded onto Matrigel coated black M96 plates at 15000 cells/well and induced to differentiate to myotubules using differentiation medium. The differentiation was monitored and imaged using calcein staining to visualize the formation of elongated, multinucleated myotubes.



Control Differentatied

Culturing conditions

1 IMMEDIATELY UPON DELIVERY

1.1 Remove the vial from the shipping container to check for freezing.

1.2 Transfer the frozen vial to liquid nitrogen until ready to thaw.

2 THAWING CELLS:

2.1 Prepare "Thawing medium" by combining 500 ml of skeletal muscle cell basal medium, 25 ml of fetal bovine serum, 5 ml of skeletal muscle Growth supplement and 5 ml of penicillin/streptomycin solution.

2.2 Thaw cells rapidly in a 37°C water bath; avoid allowing the sample to warm to 37°C. Cryovials should be cool to the touch when removed.

2.3 Remove the vial, wipe it dry, and transfer it to a sterile field.

2.4 Rinse the vial with 70% ethanol, then wipe to remove excess. Open the vial and resuspend its contents using a 1 ml Eppendorf pipette.

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Culturing conditions

2.5 Dispense the contents into an equilibrated, poly-L-lysine coated culture 25 cm^2 culture flask with warm complete media (FBS percentage can be increased up to 10% for better culture establishment). A seeding density of 7,500 cells/cm^2 is recommended.

2.6 Place the flask in the incubator.

2.7 For optimal results, avoid disturbing the culture for 16 hours after initiation. Change the growth medium the next day to remove unattached cells, then every other day thereafter.

3 MAINTENANCE OF THE CULTURE:

3.1 Change medium 48 hours after establishing a subculture.

3.2 Subculture when cells are over 90% confluent.

4 SUBCULTURING:

Remove medium, rinse with 0.05% trypsin, 0.05% EDTA solution. Add 1 to 2 mL of trypsin-EDTA solution and allow the flask to sit until cells detach. Add fresh culture medium, aspirate, and dispense into new culture flasks.

Subcultivation Ratio: Recommended ratio of 1:2 to 1:6.

Medium Renewal: 2 to 3 times per week.

Reagents for cryopreservation: Cryostor S10.

Quality Control / Biosafety

The cells test negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast and fungi.

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