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Product Information

Mouse Skeletal Muscle Satellite Cells (MSkMSC)

Catalog Number	10MU-032	**Cell Number**	0.5 million cells/vial
Species	*Mus musculus*	**Storage Temperature**	Liquid Nitrogen

Description

Mouse skeletal muscle satellite cells are small multipotent cells which are the precursors to skeletal muscle cells (1). They are located between the basement member and sarcolemma of muscle fibers and comprise 30–35% of the total muscle fiber nuclei at birth but decrease dramatically to 2–5% of the nuclei in adult animals which further depletes with age (2). Majority of satellite cells are quiescent in undamaged muscle. However, in response to mechanical strain, satellite cells become activated. Activated satellite cells initially proliferate as skeletal myoblasts before undergoing myogenic differentiation (3).

Mouse Skeletal Muscle Satellite Cells (MSkMSC) from iXCells are isolated from mouse gastrocnemius (GA) and tibialis anterior (TA) muscles of both hind limbs. MSkMSC are cryopreserved freshly after isolation and delivered frozen. Each vial contains >5X10^5 cells in 1 ml volume. MSkMSC are characterized by immunofluorescence with antibodies specific to PAX7. MSkMSC are negative for mycoplasma, bacteria, yeast and fungi. MSkMSC are guaranteed to further expand for 5 population doubling using the culture medium provided by iXCells.

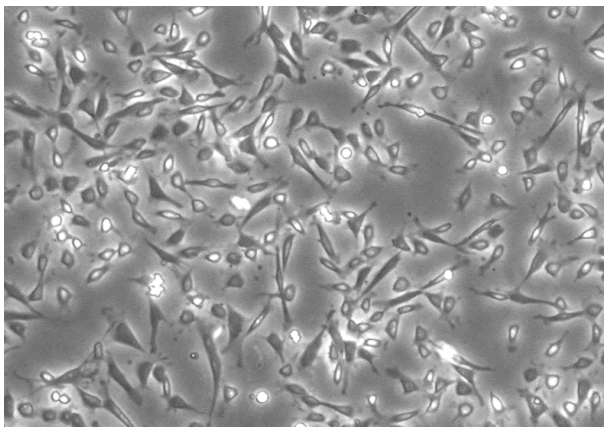

Figure 1. Mouse Skeletal Muscle Satellite Cells (MSkMSC) (Phase contrast) after culture

Product Details

Tissue	C57BL/6 mice Gastrocnemius and Tibialis Anterior muscle
Package Size	0.5 x 10^6 cells/vial
Passage Number	P0
Shipped	Cryopreserved
Storage	Liquid nitrogen
Growth Properties	Adherent
Media	Mouse Skeletal Muscle Satellite Cells Growth Medium

Protocols

Coating plates/flasks

1. Thaw iXCells Coating Matrix at 4ºC overnight (DO NOT WARM)
2. Dilute iXCells Coating Matrix 1:500 in ice cold iXCells Coating basal media.
3. Add coating solution to flasks/plates at 0.1ml/cm^2 and incubate plates at room temperature for 1 hour on a rocker.
4. Use plates immediately or store at 4ºC for up to 48 hours.

Thawing of Frozen Cells

5. Upon receipt of the frozen cells, it is recommended to thaw the cells and initiate the culture immediately in order to retain the highest cell viability.
6. To thaw the cells, put the vial in 37°C water bath with gentle agitation for 1-2 minutes. Keep the cap out of water to minimize the risk of contamination.
7. Pipette the cells into a 15 mL conical tube with 5ml fresh Mouse Skeletal Muscle Satellite Cells Growth Medium (Cat#).
8. Centrifuge at X500 g for 5 minutes under room temperature.
9. Remove the supernatant and resuspend the cells in fresh Mouse Skeletal Muscle Satellite Cells Growth Medium.
10. Culture the cell in the T75 flask. Change the medium daily until cells reach 60-70% confluence.

Safety Precaution: *it is highly recommended that protective gloves and clothing should be used when handling frozen vials.*

Standard Culture Procedure

1. Mouse Skeletal Muscle Satellite Cells (MSkMSC) can be cultured in Mouse Skeletal Muscle Satellite Cells Growth Medium (Cat#).
2. When cells reach ~60-70% confluence, remove the medium, and wash once with sterile PBS (5mL for one T75 flask).
3. Add 15ml of Ca2+/Mg2+-free DPBS/dish and incubate at 37ºC for 5-10 mins.
4. Transfer the cells into a conical tube and rinse the plate with an additional 10ml of DPBS.
5. Count cells, spin at 500g for 5 mins.
6. Seed the cells in the new culture vessels at 1.5×10^4 cells/cm^2. Change the medium daily until cells reach 60-70% confluence.

References

1. Satellite cells and the muscle stem cell niche. Physiol Rev. 2013, 93(1):23-67.
2. Cellular and Molecular Regulation of Muscle Regeneration. Physiol Rev. 2004, 84(1):209-38.
3. Skeletal muscle satellite cells and adult myogenesis. Curr Opin Cell Biol. 2007, 19(6): 628–633.

Disclaimers

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