innoprot
cell based solutions

IMMORTALIZED CELL LINES

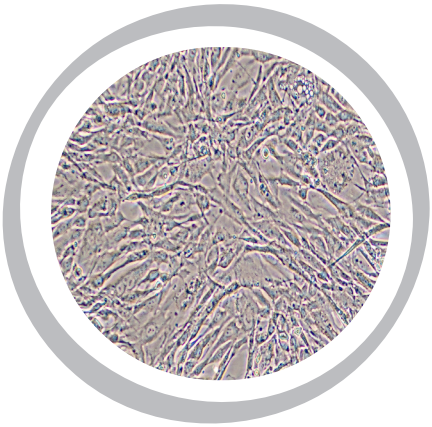
IMMORTALIZED HUMAN PREADIPOCYTES

P10761-IM

Adipocyte differentiation is a developmental process that is critical for metabolic homeostasis and nutrient signaling. It is controlled by complex actions involving gene expression and signal transduction. Preadipocytes (PA) are present throughout adult life in adipose tissues and can proliferate and differentiate into mature adipocytes according to the energy balance. The proliferation and differentiation of these PA contribute to increases in adipose tissue mass. In vitro study indicates that different tissue-derived PA exhibit differently in lipid accumulation, adipogenic transcription factor expression, and TNFα-induced apoptosis. It has also been demonstrated that there is a close relationship between adipocyte differentiation and many physiological and pathological processes.

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

Product Type: Immortalized Human Preadipocytes
Catalog Number: P10761-IM
Immortalization: SV40 Large T Antigen. G418 resistant.
Number of cells: >1x10^6 cells (cryopreserved vials)
Storage: Liquid Nitrogen
Source: Human subcutaneous or visceral fat tissues.
Recommended Medium: Preadipocyte Medium (Reference: P60122). Preadipocyte Differentation Medium (Reference: P60173).
Product Characterization: Immunofluorescent method for CD-44 and CD-90. Lipid staining after differentiation.



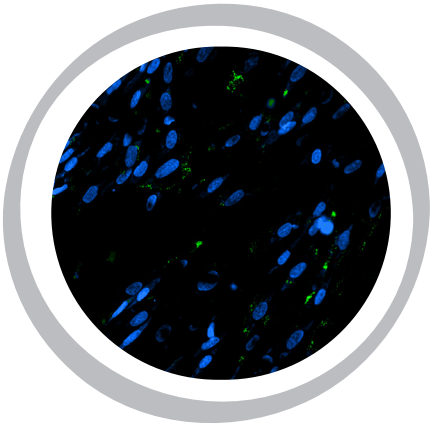
About Immortalized Human Preadipocytes

The immortalized human preadipocytes 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.

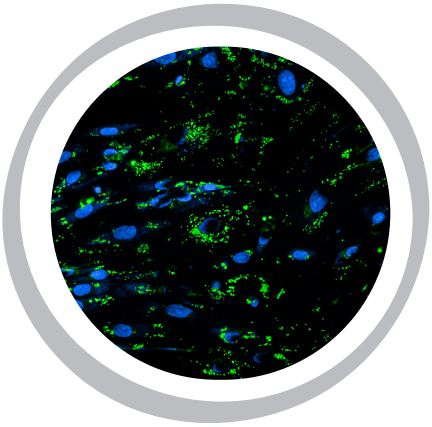
IMMORTALIZED CELL LINES

Lipid staining after differentiation.

Human immortalized preadipocytes were seeded onto black M96 plates and induced to differentiate to adipocytes using differentiation medium. The extent of adipogenic differentiation was monitored and imaged using LipidTOX staining to visualize the accumulated lipids. Lipid accumulation became increasingly visible at day 8 and demonstrated a high level of LipidTOX staining. The nuclei were also stained and imaged using Hoechst.



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 Preadipocyte basal medium, 25 ml of fetal bovine serum, 5 ml of Preadipocyte Growth supplement and 5 ml of penicillin/streptomycin solution.

2.2 Thaw cells rapidly in a 37ºC water bath; avoid allowing the sample to warm to 37ºC. 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.

INNOVATIVE TECHNOLOGIES IN BIOLOGICAL SYSTEMS, S.L.
Parque Tecnológico Bizkaia, Edifício 502, 1ª Planta | 48160 | Derio | Bizkaia
Tel.: +34 944005355 | Fax: +34 946579925
innoprot@innoprot.com | www.innoprot.com

innoprot
cell based solutions

Culturing conditions

2.5 Dispense the contents into a 25 cm^2 culture flask with warm complete media (FBS percentage can be increased up to 10% for better culture establishment).

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.

INNOVATIVE TECHNOLOGIES IN BIOLOGICAL SYSTEMS, S.L.
Parque Tecnológico Bizkaia, Edifício 502, 1ª Planta | 48160 | Derio | Bizkaia
Tel.: +34 944005355 | Fax: +34 946579925
innoprot@innoprot.com | www.innoprot.com

innoprot cell based solutions