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cell based solutions

NEUROSCIENCES INNOPROFILE™

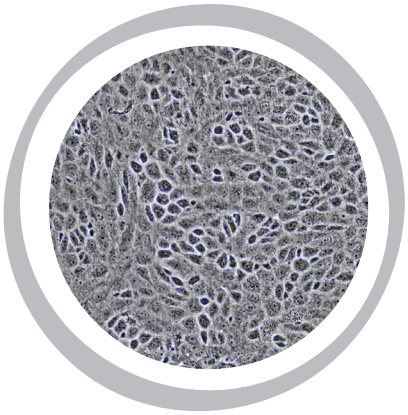
PRIMARY PORCINE RETINAL
PIGMENT EPITHELIAL CELLS

P10833

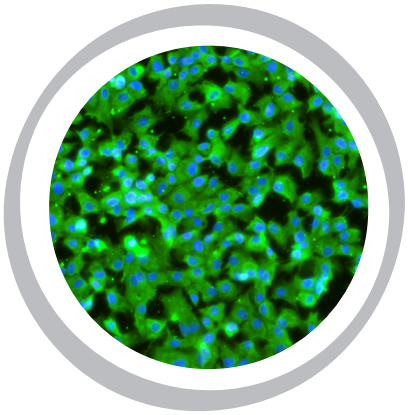
Primary Porcine Retinal Pigment Epithelial (RPE) Cells are isolated from the retinal pigment epithelium of porcine eyes obtained from an authorized local supplier. RPE cells form a polarized epithelial monolayer between the neural retina and the choroid and play an essential role in retinal homeostasis, including phagocytosis of photoreceptor outer segments, regulation of the visual cycle, maintenance of the outer blood–retinal barrier, and control of ion and metabolite transport.

Dysfunction of RPE cells is implicated in a wide range of retinal disorders, including age-related macular degeneration, retinal degeneration, and inflammatory retinal diseases. Primary porcine RPE cells retain characteristic morphological and functional features, such as tight junction formation. Their physiological relevance and close similarity to human RPE biology make them a valuable in vitro model for retinal research, disease modeling, barrier function studies, and evaluation of therapeutic and drug delivery strategies targeting the posterior segment of the eye.

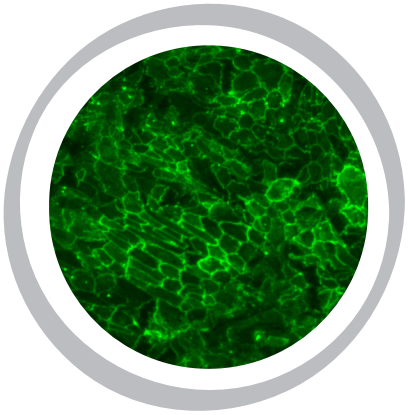
Product Type: Primary Porcine Retinal Pigment Epithelial Cells
Catalog Number: P10833
Number of cells: >0.5 x10^6 or 1 x10^6 cells (cryopreserved vials)
Storage: Liquid Nitrogen
Recommended Medium: Epithelial Cell Medium (Reference: P60106)
Product Characterization: IF positive for RPE-65, ZO-1and CK18.



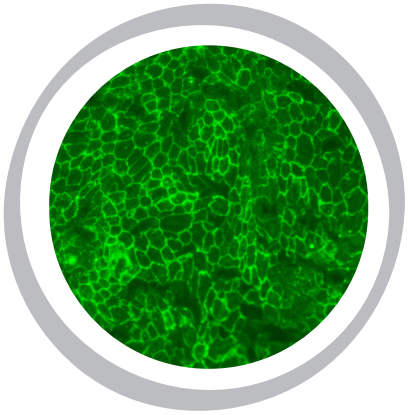
Phase Contrast



RPE-65



ZO-1



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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 storage until ready to thaw.

2. THAWING CELLS

2.1. Pre-coat the desired culture vessel with collagen. Incubate for 1 hour. Allow the surface to dry in a sterile environment.

2.2. Prepare the complete culture medium by mixing basal medium, fetal bovine serum (FBS), growth supplement and penicillin-streptomycin solution. Warm the medium to 37 °C prior to use.

2.3. Thaw the cryovial rapidly in a 37 °C water bath, gently swirling the vial. Do not allow the contents to reach 37 °C internally. Remove the vial while still cool to the touch.

2.4. Wipe the exterior of the vial with 70% ethanol and transfer it to a sterile biosafety cabinet.

2.5. Open the vial and gently transfer the contents into a 15 ml conical tube containing 9.5 ml of pre-warmed complete medium to dilute the DMSO.

2.6. Centrifuge at 1500 rpm for 10 minutes at room temperature. Carefully discard the supernatant to remove residual DMSO.

2.7. Resuspend the pellet gently in 1 ml of pre-warmed complete medium using a 2 ml pipette.

2.8. Transfer the cell suspension directly into the pre-warmed coated culture vessel containing fresh complete medium.

2.9. Place the culture vessel in a humidified incubator at 37 °C with 5% CO_2.

2.10. For optimal recovery, avoid disturbing the culture for the first 16–18 hours. Replace the medium the following day to remove unattached cells and debris, and then every other day thereafter.

3. CULTURE MAINTENANCE

- Renew the culture medium 2–3 times per week depending on cell density and experimental needs.
- The recommended seeding density ranges from 30,000 to 40,000 cells per well in a 96-well plate (surface area ≈ 0.32 cm^2 per well). Do not seed cells at a density lower than 50,000 cells/cm^2, as insufficient seeding may compromise cell viability and adherence.
- Excessive subculturing may lead to a significant loss of phenotypic and functional properties.

Quality Control: Cells are tested and confirmed negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fungi.

** Under standard in vitro culture conditions, primary porcine RPE cells progressively lose pigmentation and this should be taken into account when designing pigmentation-dependent assays.*

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