Primary Bladder Epithelial Cells (A/T/N); Normal, Human (BdEC) (ATCC® PCS-420-010™)

Description

Components: One vial of Bladder Epithelial Cells; Normal, Human (ATCC® No. PCS-420-010) containing a minimum of 5 x 10⁵ viable cells (provided).

Also Required: One bottle of Prostate Epithelial Basal Medium (ATCC® No. PCS-440-030) supplemented with Corneal Epithelial Growth Kit (ATCC® No. PCS-700-040).

Cell Characteristics

Tissue: Bladder

Morphology: Tightly packed polygonal cells

Growth Properties: Adherent

Batch-Specific Information

Refer to the Certificate of Analysis for batch-specific test results.

SAFETY PRECAUTION

Unpacking & Storage Instructions

1. Check all containers for leakage or breakage.
2. Remove the frozen cells from the dry ice packaging and immediately place the cells at a temperature below -130°C, preferably in liquid nitrogen vapor, until ready for use.

Preparation of Complete Growth Medium

1. Obtain one vial of Primary Bladder Epithelial Cells; Normal, Human (ATCC® PCS-420-010) from the liquid nitrogen tank; make sure that the caps of all components are tight.
2. Thaw the components of Corneal Epithelial Growth Kit (ATCC® No. PCS-700-040) just prior to adding them to the Prostate Epithelial Basal Medium.
3. Obtain one bottle of Prostate Epithelial Basal Medium (ATCC® No. PCS-440-030) from cold storage.
4. Decontaminate the external surfaces of all growth kit component vials and the basal medium bottle by spraying them with 70% ethanol.
5. Using aseptic technique and working in a laminar flow hood or biosafety cabinet, transfer the indicated volume of each growth kit component, as indicated in Table 1, into the bottle of basal medium using a separate sterile pipette for each transfer.

Table 1. Corneal Epithelial Cell Growth Kit; add the indicated volume for each of the following components.

<table>
<thead>
<tr>
<th>Component</th>
<th>Volume</th>
<th>Final Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apo-transferrin</td>
<td>0.5 mL</td>
<td>5 mg/mL</td>
</tr>
<tr>
<td>Epinephrine</td>
<td>0.5 mL</td>
<td>1.0 mM</td>
</tr>
<tr>
<td>Extract P</td>
<td>2 mL</td>
<td>0.4%</td>
</tr>
<tr>
<td>Hydrocortisone</td>
<td>0.5 mL</td>
<td>100 ng/mL</td>
</tr>
<tr>
<td>Hemisuccinate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L-Glutamine</td>
<td>15 mL</td>
<td>6 mM</td>
</tr>
<tr>
<td>rh Insulin</td>
<td>0.5 mL</td>
<td>5 µg/mL</td>
</tr>
<tr>
<td>CE Growth Factor</td>
<td>1 mL</td>
<td>Proprietary formulation</td>
</tr>
</tbody>
</table>

Antimicrobials and phenol red are not required for proliferation but may be added if desired. The recommended volume of either of the optional components to be added to the complete growth media is summarized in Table 2.
Volume Storage Temp.
0.5 mL -130°C or below

Table 2. Addition of Antimicrobials/Antimycotics and Phenol Red (Optional)

<table>
<thead>
<tr>
<th>Component</th>
<th>Volume</th>
<th>Final Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penicillin-Streptomycin-</td>
<td>0.5 mL</td>
<td>Penicillin: 10 U/mL</td>
</tr>
<tr>
<td>Amphotericin B Solution</td>
<td></td>
<td>Streptomycin: 10 µg/mL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Amphotericin B: 25 µg/mL</td>
</tr>
<tr>
<td>Phenol Red</td>
<td>0.5 mL</td>
<td>33 µM</td>
</tr>
</tbody>
</table>

- Tightly cap the bottle of complete growth medium and swirl the contents gently to assure a homogeneous solution. Do not shake forcefully to avoid foaming. Label and date the bottle.
- Complete media should be stored in the dark at 2°C to 8°C (do not freeze). When stored under these conditions, complete media is stable for 30 days.

Handling Procedure for Frozen Cells and Initiation of Culture

1. Refer to the batch specific information for the total number of viable cells recovered from this lot of (ATCC® No. PCS-420-010).
2. Using the total number of viable cells, determine how much surface area can be inoculated to achieve an initial seeding density of between 3,000 and 5,000 cells per cm².
3. Prepare the desired combination of lasks. Add 5 mL of complete growth media per 25 cm² of surface area. Place the flasks in a 37°C, 5% CO₂, humidified incubator and allow the media to pre-equilibrate to temperature and pH for 30 minutes prior to adding cells.
4. While the culture flasks equilibrate, remove one vial of (ATCC® No. PCS-420-010) from storage and thaw the cells by gentle agitation in a 37°C water bath. To reduce the possibility of contamination, keep the O-ring and cap out of the water. Thawing should be rapid (approximately 1 to 2 minutes).
5. Remove the vial from the water bath as soon as the contents are thawed, and decontaminate by dipping in or spraying with 70% ethanol. All operations from this point onward should be carried out under strict aseptic conditions.
6. Add the appropriate volume of complete growth media [volume = (1 mL x number of flasks to be seeded) – 1 mL] into a sterile conical tube. Using a sterile pipette, transfer the cells from the cryovial to the conical tube. Gently pipette the cells to homogenize the suspension. Do not centrifuge.
7. Transfer 1.0 mL of the cell suspension to each of the pre-equilibrated culture flasks prepared in steps 1 to 3 of Handling Procedure for Frozen Cells and Initiation of Culture. Pipette several times, then cap and gently rock each flask to evenly distribute the cells.
8. Place the seeded culture flasks in the incubator at 37°C with a 5% CO₂ atmosphere. Incubate for at least 24 hours before processing the cells further.

Maintenance

Pre-warm complete growth media in a 37°C water bath. This will take between 10 to 30 minutes, depending on the volume. If using a small volume of medium (50 mL or less), warm only the volume needed in a sterile conical tube. Avoid warming complete growth media multiple times.
2. 24 to 36 hours after seeding, remove the cells from the incubator and view each flask under the microscope to determine percent cellular confluence.
3. Carefully remove the spent media without disturbing the monolayer.
4. Add 5 mL of fresh, pre-warmed complete growth media per 25 cm² of surface area and return the flasks to the incubator.
5. After 24 to 48 hours, view each flask under the microscope to determine percent cellular confluence. If not ready to passage or subculture, repeat steps 3 and 4 as described above. When cultures have reached approximately 80% to 85% confluence, it is time to subculture. Human bladder epithelial cells are not contact inhibited. However, ATCC® recommends that epithelial be passaged before reaching confluence since post-confluent cells will exhibit slower proliferation.

Note: Cells are typically ready to passage after 6 to 7 days in culture when inoculated with 3,000 cells/cm².

Subculturing

1. Passage normal bladder epithelial cells when culture has reached approximately 80% confluence.
2. Warm both the Trypsin-EDTA for Primary Cells (ATCC® No. PCS-999-003) and the Trypsin Neutralizing Solution (ATCC® No. PCS-999-004) to room temperature prior to dissociation. Warm complete growth medium to 37°C prior to use with the cells.
3. For each flask, carefully aspirate the spent media without disturbing the monolayer.
4. Rinse the cell layer two times with 3 to 5 mL DPBS (ATCC® No. 30-2200) to remove residual traces of serum.
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Please read this FIRST

Storage Temp. -130°C or below

Biosafety Level 1

Intended Use

This product is intended for research use only. It is not intended for any animal or human therapeutic or diagnostic use.

Citation of Strain

If use of this culture results in a scientific publication, it should be cited in that manuscript in the following manner: Primary Bladder Epithelial Cells (A/T/N); Normal, Human (BdEC) (ATCC® PCS-420-010™)

Quality Control Specifications

Sterility Testing
Bacteria and Yeast: Negative
Mycoplasma: Negative

Viral Testing
Hepatitis B: Negative
Hepatitis C: Negative
HIV-1 and -2: Negative

Specific Staining
Cytokeratin-18 (+), TE-7 (-)

Biosafety Level: 1

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the current publication of the Biosafety in Microbiological and Biomedical Laboratories from the U.S. Department of Health and Human Services Centers for Disease Control and Prevention and National Institutes for Health.

Human Material Precaution

All tissues used for isolation are obtained under informed consent and conform to HIPAA standards to protect the privacy of the donor’s personal health information. It is best to use caution when handling any human cells. We recommend that all human cells be accorded the same level of biosafety consideration as cells known to carry HIV. With infectious virus assays or viral antigen assays, even a negative test result may leave open the possible existence of a latent viral genome.

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Additional information on this culture is available on the ATCC Web site at www.atcc.org.

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