General Instructions for Use

Human Gastrointestinal Epithelial Cells
Instructions apply to Gastric (HGaEpC), Intestinal (HInEpC), Colonic (HCnEpC), Duodenum (HDuEpC), Ileum (HIIEpC), and Jejunum (HJeEpC) Epithelial Cells

Be sure to wear face protection mask and gloves when retrieving cryovials from the liquid nitrogen storage tank. The dramatic temperature change from the tank to the room could cause any trapped liquid nitrogen in the cryovials to burst and cause injury.

Open all the packages immediately upon arrival and examine each component for shipping damage. Notify Cell Applications, Inc. or your distributor immediately if there is any problem.

I. STORAGE
A. CRYOPRESERVED VIALS* (732Ga-##, 732In-##, 732Cn-##, 732Du-##, 732Je-##)
   Store the cryovials in a liquid nitrogen storage tank immediately upon arrival.
B. GI EPITHELIAL CELL DEFINED CULTURE MEDIUM (716DC-50)
   Store at -20°C in the dark. The frozen medium is stable for 6 months. Once thawed, keep at 4°C in the dark and use within 4 weeks. Freeze-thaw cycles are not recommended. If necessary, the thawed medium can be aliquoted and refrozen once.
C. GI EpC COATING SOLUTION (025-05)
   Store at -20°C. The frozen coating solution is stable for 6 months. Once thawed, keep at 4°C and use within 4 weeks.
D. GI EpC THAWING MEDIUM (716T-20)
   Store at -20°C. The frozen medium is stable for 6 months. Once thawed, keep at 4°C and use within 3 months.

Reagent not included in the Total Kit:
TEER ASSAY OPTIMIZED GI EPITHELIAL CELL CULTURE MEDIUM (716TA-50)
Store the Culture Medium (716TA-50) at 4°C in the dark immediately upon arrival. Use within 4 weeks of arrival. If not used immediately, store at -20°C upon arrival. The frozen medium is stable for 6 months. Once thawed, keep at 4°C and use within 4 weeks. Re-freeze the culture medium is not recommended.

II. PREPARATION FOR CULTURING
1. Make sure the Class II Biological Safety Cabinet, with HEPA filtered laminar airflow, is in proper working condition.
2. Clean the Biological Safety Cabinet with 70% alcohol to ensure it is sterile.
3. Turn the Biological Safety Cabinet blower on for 10 min. before cell culture work.
4. Make sure all serological pipettes, pipette tips and reagent solutions are sterile.
5. Follow the standard sterilization technique and safety rules:
   a. Do not pipette with mouth.
   b. Always wear gloves and safety glasses when working with human cells even though all the strains have been tested negative for HIV, Hepatitis B and Hepatitis C.
   c. Handle all cell culture work in a sterile hood.

III. CULTURING HGIEpC
A. PREPARING CELL CULTURE WARES FOR CULTURING HGIEpC
1. Take the GI EpC Thawing Medium and GI EpC Culture Medium from the refrigerator. Decontaminate the bottle with 70% alcohol in a sterile hood.
2. Plan the seeding density in each experiment.
3. Thaw the GI EpC COATING SOLUTION at 4°C overnight. Ensure that the thawing medium is cold enough to avoid gelling.
4. Prepare number of wells of a 48 well plate for culturing HGIEpC by pipetting 150 µl of GI EpC Coating Solution per well. (See tables for cell numbers and volume used).
5. Incubate coated plate at room temperature for at least 30 minutes (do not exceed one hour, so adjust your time before taking out the cell vial).

Cell Applications Inc (hereinafter CAI) warrants that its products are manufactured with the utmost care and stringent quality control procedures. However, if you should ever have a problem with the products, we will either replace the products, or in the case we cannot deliver the products, provide you with a refund. Such warranty is applicable only when CAI’s cells are used in conjunction with CAI’s medium and subculture reagents, and vice versa.
B. PREPARING MEDIUM FOR CULTURING HGIEpC

1. Bring HGIEpC Thawing Medium to room temperature. Transfer 8 ml of HGIEpC Thawing Medium in a 15 ml tube.

2. Take out the required volume of Culture Medium according to the Table on right side and warm up to room temperature*.

   *Do not warm HGIEpC Culture Medium to 37°C.

C. THAWING AND PLATING HGIEpC

1. Remove the cryopreserved vial of HGIEpC from the liquid nitrogen storage tank using proper protection for your eyes and hands.

2. Turn the vial cap a quarter turn to release any liquid nitrogen that may be trapped in the threads, then re-tighten the cap and bury the cryovial in dry ice.

3. Thaw the cells quickly by placing the lower half of the vial in a 37°C water bath and watch the vial closely during the thawing process. This usually takes about 90 sec.

4. Take the vial out of the water bath when only small amount of ice left in the vial. Do not let cells thaw completely.

5. Decontaminate the vial exterior with 70% alcohol in a sterile Biological Safety Cabinet.

6. Remove the vial cap carefully. Do not touch the rim of the cap or the vial.

7. Resuspend the cells in the vial by gently pipetting the cells once with a pre-wet, 1 ml aerosol pipette tip set at 950 µl. Do not to pipette vigorously as it might cause foaming.

8. Transfer the cell suspension (1 ml) drop wise to the 15 ml conical tube containing 8 ml HGIEpC Thawing Medium prepared in Section III B step 1.

9. Add 1 ml of fresh HGIEpC Thawing Medium to the cryovial for wash and add to the 15 ml tube to a final volume of 10 ml. Mix by gently inverting the tube couple of times to avoid osmotic shock.

10. Centrifuge cells in the 15 ml conical tube at 200g for 5 minutes. Remove supernatant carefully by aspiration without disturbing the cell pellet. Gently break the pellet by flickering the tube few times with your finger.

11. Re-suspend HGIEpC at 1 x 10⁹/2.5ml in HGIEpC Culture Medium. Use a pre-wet, 1 ml aerosol pipette tip to evenly re-suspend the pellet in 1 ml HGIEpC Culture Medium without any visible cell clumps. Then add the rest 1.5 ml medium and gently re-suspend again.

12. Aspirate HGIEpC Coating Solution from the wells of the plate prepared in Section III A step 5.

13. Seed HGIEpC suspension to the coated wells as suggested in the reference tables. Rock gently to evenly distribute the cells.

14. Place the plate in a 37°C, 5% CO₂ humidified incubator. For best results, do not disturb the culture for 24 hours after plating.

15. Change to fresh HGIEpC Culture Medium after 24 hours.

16. Change the HGIEpC Culture Medium every other day.

17. The HGIEpC monolayer culture should expand in patches in HGIEpC Culture Medium for upto 4 days and can be continued upto day 7.

<table>
<thead>
<tr>
<th>TC Well Plate</th>
<th>Volume per Well</th>
<th>Approx. No of HGIEpC required for Normal Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HGIEpC Coating Solution</td>
<td>HGIEpC Suspension in 716DC-50</td>
</tr>
<tr>
<td>48</td>
<td>0.15 ml</td>
<td>500 µl</td>
</tr>
<tr>
<td>24</td>
<td>0.25 ml</td>
<td>1 mL</td>
</tr>
</tbody>
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Table 1: Seeding guide of corresponding cell numbers and working volumes for normal seeding

*Optional use of TEER assay optimized GI epithelial cell culture medium (716TA-50)

If a confluent monolayer is intended, we recommend using our TEER assay optimized GI epithelial cell culture medium (716TA-50) for faster cell expansion and a confluent monolayer by day 3-4. The cells can be continued upto day 7.

<table>
<thead>
<tr>
<th>TC Well Plate</th>
<th>Volume per Well</th>
<th>Approx. No of HGIEpC required for Confluent Culture</th>
</tr>
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<tbody>
<tr>
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<td>HGIEpC Coating Solution</td>
<td>HGIEpC Suspension in 716TA-50</td>
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