# Measuring TEER with EVOM

***** *Please note that this procedure should only be used as guidance. Experimental success is not guaranteed as the reagents used have not been validated by Altis. For specific information about EVOM and TEER electrode part codes and options, please reach out to World Precision Instruments (WPI).*

## 1 Reagents Needed in Addition to RepliGut® Planar Cultures

1. 70% Ethanol
2. 1X PBS
3. EVOM (WPI)
4. 96-Well Electrode (WPI)

## 2 Procedure

- *The following protocols must be carried out in a sterile tissue culture hood.*
- *Optional: Place plate on top of heat pack within an insulated Styrofoam box. Measuring TEER on an entire plate will take 5-10 minutes, and this will reduce temperature fluctuations and disturbance to cells. Store heat pack in a 37℃ incubator prior to use. Spray heat-pack with ethanol and wipe it down upon removing it from incubator and before placing in hood.*
- *Measure TEER as soon as the transwell plate is removed from the incubator. Do not delay or check cells beforehand as any temperature drops will impact TEER measurements. If cells are removed for observation, place them back in the incubator and allow them to reach 37℃ before taking TEER measurements.*

**Measuring TEER on 96-well Transwells with EVOM**

1. Connect the appropriate electrode to the EVOM and turn on the EVOM.
2. Dip electrode in 70% ethanol and shake to remove any excess EtOH.
3. Dip electrode in sterile 1XPBS to rinse.
4. Measure TEER by placing the electrode end of the probe into the transwell, with the shorter end inside of the transwell and the longer end in the basolateral receiver well. The electrode should sit on the well insert by itself.
5. Allow the TEER value to stabilize before recording the measurement. This value is the “raw TEER value”.
    a. Do not hold the probe while taking readings. Allow the electrode to sit on its own for 2-5 seconds while the reading stabilizes and does not change by more than 10 units.
    b. Note: Readings may not fully stabilize quickly, so use a consistent time interval to record values.
6. Read each well within the same cell/media/treatment group using steps 4-5.
    a. Note: If changing media/treatment type, rinse the probe with PBS between groups.
7. Once all TEER measurements have been made, rinse the electrode with 70% ethanol and DI water.

8. Allow the electrode to air dry, and then store it dry.

**Calculating Corrected TEER**

To calculate Corrected TEER, use the following formula:

$$(raw\ TEER\ of\ sample\ transwell - raw\ TEER\ of\ blank\ transwell)\ x\ Surface\ Area$$

Surface area of 96-well Transwell plate : 0.143 $cm^2$.

## CONTACT INFORMATION:

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