

Supplementary Table 1. ECIS, xCELLigence and cellZscope instrument parameters

	ECIS	xCELLigence	cellZscope
Frequency range	<p>Range: 10 Hz to 10⁵ Hz</p> <p>Exact values are user specifiable. The values used in this study were the default frequencies of 62.5, 125, 250, 500, 1 000, 2 000, 4 000, 8 000, 16 000, 32 000 and 64 000 Hz</p>	<p>Data can only be collected at three frequencies:</p> <p>10 000, 25 000 and 50 000 Hz</p>	<p>Range: 1Hz to 100 kHz</p> <p>Exact values are selected from either “coarse” or “fine”. Fine resolution was used in this study, corresponding to frequencies of 1.29, 1.67, 2.15, 2.78, 3.59, 4.64, 5.99, 7.74, 10.00, 12.92, 16.68, 21.54, 27.83, 35.94, 46.42, 59.95, 77.43, 100.00, 129.15, 166.81, 215.44, 278.26, 359.38, 464.16, 599.48, 774.26, 1 000.00, 1 291.55, 1 668.10, 2 154.43, 2 782.56, 3 593.81, 4 641.59, 5 994.84, 7 742.64, 10 000.00, 12 915.50, 16 681.01, 21 544.35, 27 825.59, 35 938.14, 46 415.89, 59 948.43, 77 426.37 and 100 000.00 Hz</p>
Modelled values			
Cell-cell interaction	Rb	-	TER
Membrane capacitance	Cm	-	C _{CL}
Basolateral adhesion	Alpha	-	-

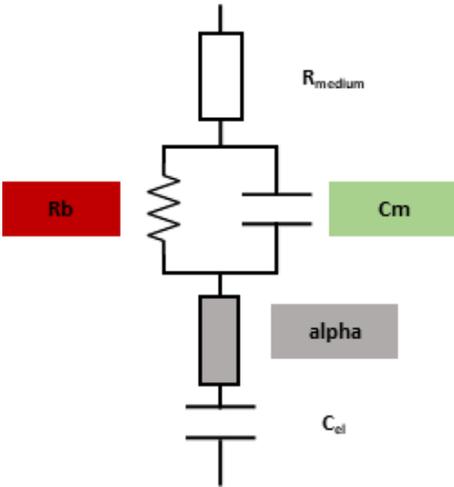
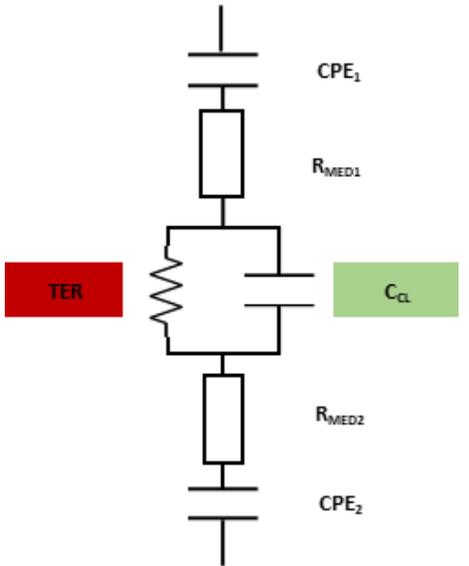
Equivalent circuits		<p>Not determined, as modeling is not appropriate for this system</p>	
Cell culture vehicle	ECIS 96 well plates (96W20idf plate)	xCELLigence 96 well plates (E-plate)	Transwells (available from various manufacturers) that fit in re-usable stainless steel pots
Electrode material	Gold	Gold	Stainless Steel
Well growth area	0.32 cm ²	0.196 cm ²	0.33 cm ²
Electrode area	0.3985 cm ²	~80% of cell growth area (~0.157 cm ²)	Not provided by manufacturer

Photo showing top view of electrode configuration in each well (lid removed).

Scale: ruler shows 1mm increments

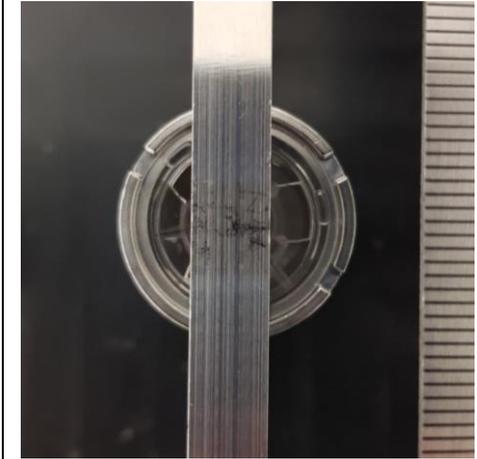
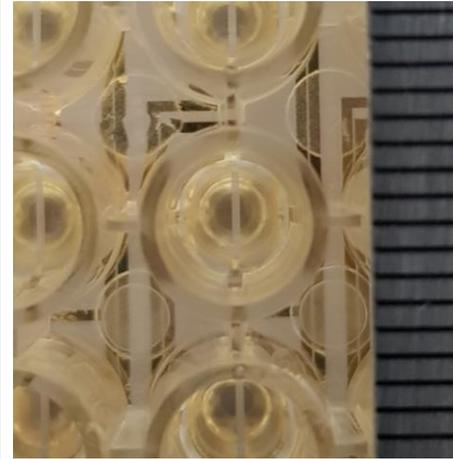
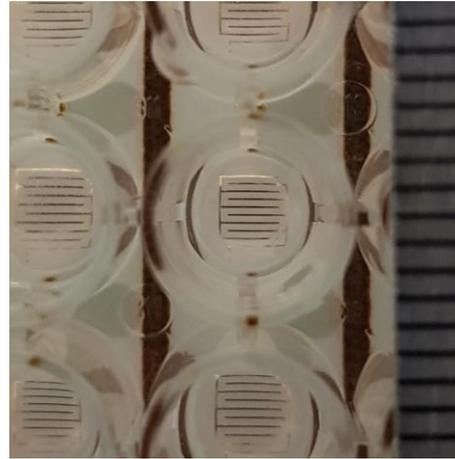
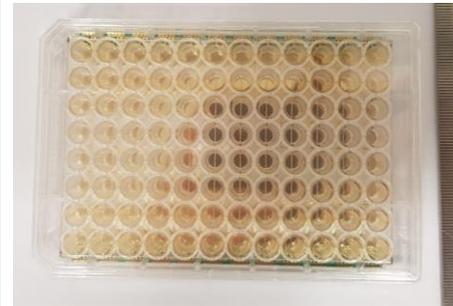


Photo showing top view of entire plate or cell module used in each system.

Scale: ruler shows 1mm increments



N.B. Some of the information provided in this table can also be sourced from the technical manuals for each instrument from their respective manufacturers.