



# ILLUMINATING DISCOVERY<sup>®</sup>

Real-time fluorescence plate  
reader-based *in vitro* cell based assay kits

## pH-Xtra<sup>™</sup> Stress Test Glycolysis Stress Test



- Companion kit for use with Luxcel Biosciences' pH-Xtra<sup>™</sup> Glycolysis Assay
- Easy determination of cellular ability to respond to metabolic stress by modulation of glycolytic rate
- All control compounds, buffers and signal controls included
- Convenient adjustment of glucose concentrations during measurement

The ability to adapt the rate of glycolysis in response to environmental, metabolic, energetic and other stressors is a vital mechanism to maintain normal cellular function and an important regulator of cell fate decisions. Impairment of this flexibility has implications in many research areas, and exploiting it for therapeutic intervention is regarded as a promising approach for example in cancer therapy.

Simple assessment of extracellular acidification as a measure of glycolysis is a valuable tool for investigating basal glycolytic rates, however, it does not measure the cellular potential to increase glycolysis as a response to external and internal factors. This glycolytic flexibility is determined by several factors, such as the expression and activity of enzymes involved in glycolysis, nutrient availability and ATP-demand.

## Using this kit in conjunction with the pH-Xtra<sup>®</sup> Glycolysis Assay you can easily measure:

- Basal glycolysis
- Glycolytic capacity
- Compensatory glycolysis
- Non-glycolytic acidification

A major advantage of using Luxcel Biosciences kits is that they are designed for use with most fluorescence plate readers and standard 96- 384-well microtitre plates!

- NO in lab waiting time for specialised equipment to become available and NO capital expenditure required

Luxcel's pH-Xtra<sup>™</sup> Stress Test contains all the tools necessary to extend Luxcel Biosciences' pH-Xtra<sup>™</sup> Glycolysis Assay for the additional evaluation of the glycolytic response of to metabolic stress. It contains a measurement buffer tablet and glucose to allow the convenient adjustment of glucose availability, 2-Deoxyglucose as glycolysis inhibitor and Oligomycin, an inhibitor of respiration driven ATP-generation to trigger maximum glycolytic activity.



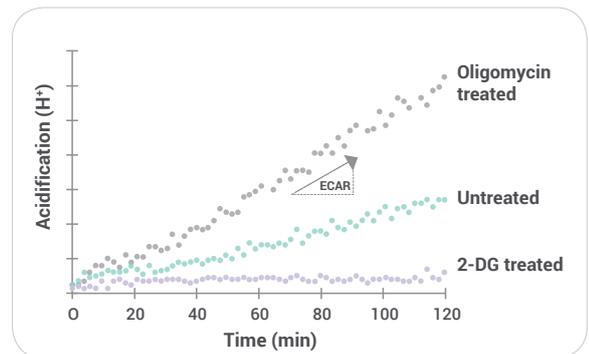
\* Glycolysis Stress Test Combi Kit includes both pH-Xtra<sup>™</sup> Glycolysis Assay + pH-Xtra<sup>™</sup> Stress Test

## pH-Xtra<sup>™</sup> Stress Test Kit - Catalogue No PHC-300

For use in combination with pH-Xtra<sup>™</sup> Glycolysis Assay (PH-200)

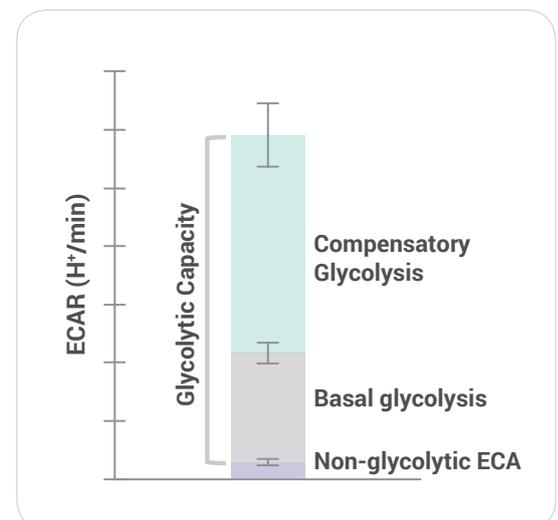
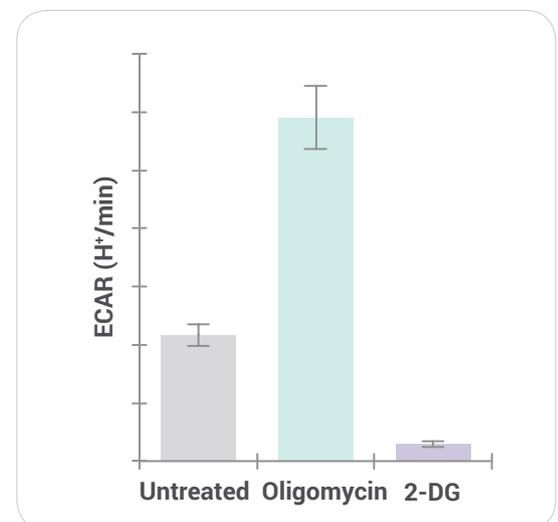
PHC-300 Kit Components	Item	Description
Glucose-free Respiration Buffer	1 tablet	Buffer with low buffering capacity
Glucose	Powder	Convenient adjustment of glucose concentration
Oligomycin	1 vial	Inhibits respiration driven ATP synthesis
2-Deoxyglucose	1 vial	Inhibits glycolysis
Glucose Oxidase Signal Control	1 vial	Cell free signal control
Full User Manual	X 1	Detailed instructions on set up and data analysis

### Glycolysis Measured Under Stress Conditions



**Figure 1:** Real-time observation of glycolytic activity in live cells using the pH-Xtra<sup>™</sup> Stress Test in combination with the pH-Xtra<sup>™</sup> Glycolysis Assay reveals the cells ability to respond to metabolic stress by modulating glycolysis. All controls, buffers and compounds needed are included in the kit.

### Glycolytic capacity of live cells



**Figure 2:** Glycolytic rates of live cells, measured with the pH-Xtra<sup>™</sup> Stress Test in combination with the pH-Xtra Glycolysis Assay. When cells are treated with the glycolytic inhibitor 2-Deoxyglucose, only non-glycolytic acidification is observed. Untreated cells reflect basal glycolytic rates under given conditions, and cells treated with Oligomycin, an inhibitor of respiration driven ATP generation reveal the cells ability to respond to metabolic stress by modulating glycolytic rates.