



ILLUMINATING DISCOVERY[®]

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

pH-Xtra[™] Glycolysis Assay

Easily measure extracellular
acidification rate (ECAR)



- Quantitative measurement of glycolysis in real-time
- Simple mix-and-measure protocol
- Non-destructive, reversible and multiparametric
- No requirement to compensate for CO₂ derived acidification

Glycolysis is a critical metabolic pathway in eukaryotic cells and plays a significant role in physiological processes like differentiation, proliferation, and fast generation of energy. Alterations in glycolysis also have critical implications in a plethora of diseases, which include, but are not exclusive to cancer, cardiovascular and metabolic diseases. Unlike conventional end-point glycolysis assays,

the pH-Xtra[™] Glycolysis Assay measures extracellular acidification rate (ECAR) in real-time, allowing the observation of temporary changes and fast responses of the glycolytic machinery. Samples are unsealed; under these conditions, ECAR is a reliable and robust measure of glycolytic flux without the requirement of additional correction for acidification from mitochondrial respiration.

Luxcel Biosciences' pH-Xtra™ Glycolysis Assay

The pH-Xtra™ Glycolysis Assay allows researchers to conveniently assess glycolytic rates for metabolic characterisation and determination of how specific interventions like nutrient deprivation, hypoxia, drug treatment or genetic manipulation impact on glycolytic flux.

Simple “mix-and-measure” protocol allows multiparametric analysis with a range of other assay kits, for example MitoXpress® Xtra Oxygen Consumption Assay and pH-Xtra™ Stress Test.

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

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

pH-Xtra™ Glycolysis Assay

PH-200 Kit Component Details¹

Kit Component	Item	Description
pH-Xtra™ Reagent	1 vial	pH sensing probe
Respiration Buffer	1 tablet	Buffer with low buffering capacity

- Extend the pH-Xtra™ Glycolysis Assay with Luxcel Biosciences' new pH-Xtra™ Stress Test to measure glycolytic flux under stress conditions. Both assay kits are available individually or together as a combination kit for convenience.

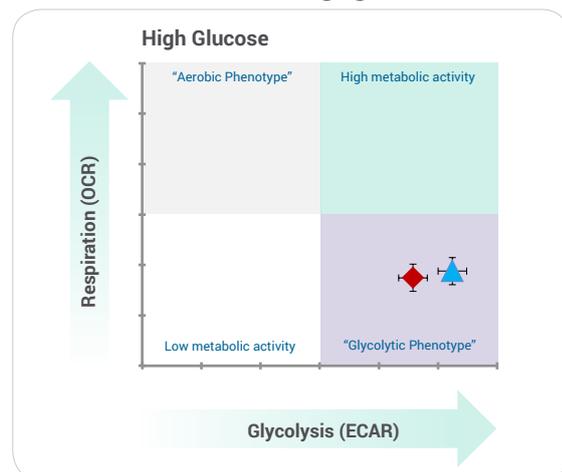


¹ For people conducting multiple ongoing experiments these kits also come in a multipack of 4 the PH-200/4 with 4 vials and 4 buffer tablets.

REFERENCES

- ¹ Data modified from: Potter M *et al.*, *Biochem. Soc. Trans.* (2016), 44, 1499.
² Hynes, J., *et al.*, *Anal. Biochem.*, (2009), 390(1), p. 21-8.

Metabolic phenotype of cancer cells - high glucose



Metabolic phenotype of cancer cells - low glucose

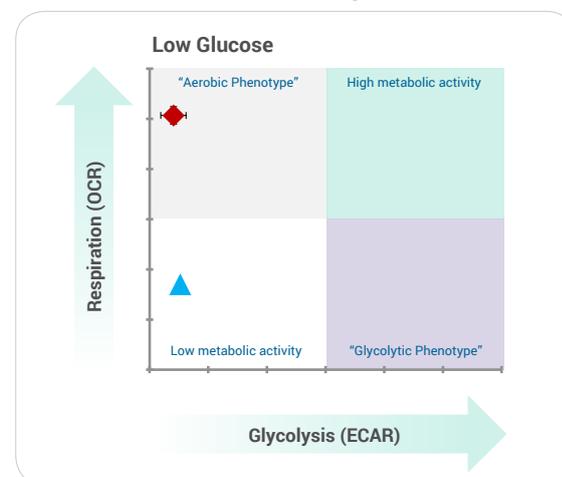


Figure 1 & 2: Metabolic phenotype of two cancer cell lines in high (25 mM) and low (1 mM) glucose concentration.¹ Cells in high glucose show a Warburg phenotype. However, when cultured in low glucose, either a more aerobic phenotype (metabolic flexibility) or a reduction in metabolic activity, while maintaining dependence on glycolysis, is observed. Oxygen consumption (OCR) and extracellular acidification (ECAR) were measured using Luxcel's MitoXpress® Xtra and pH-Xtra™ assay kits.

Observe glycolysis in live cells - in real-time

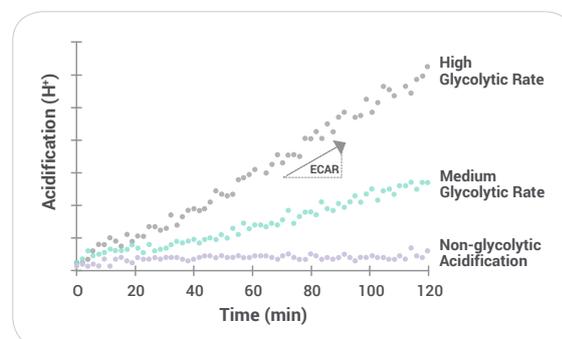


Figure 3: Extracellular acidification rate (ECAR) measured with the pH-Xtra™ is a reliable and established indicator for glycolytic activity in cells, without the necessity of additional experiments to correct for CO₂ derived acidification.²