abcam

Product datasheet

Glycolysis Assay [Extracellular acidification] ab197244

15 References 3 Images

Overview

Product name	Glycolysis Assay [Extracellular acidification]
Detection method	Fluorescent
Sample type	Adherent cells, Suspension cells
Assay type	Cell-based (quantitative)
Assay time	1h 30m
Product overview	Glycolysis Assay [Extracellular Acidification] (ab197244) is an easy mix-and-measure, 96 well fluorescence plate reader-based approach for the analysis of extracellular acidification (ECA/ECAR). As lactate production is the main contributor to this acidification, ab197244 is a convenient and informative measure of cellular glycolytic flux. Such measurements offer an important insight into the central role played by altered glycolytic activity in a wide array of physiological and pathophysiological processes, including cellular adaptation to hypoxia and ischemia, and the development and progression of tumorigenesis. The performance of Glycolysis Assay facilitates sensitive robust microtiter-plate based measurements, thereby overcoming many of the problems associated with the more cumbersome potentiometric pH approach. Rates of extracellular acidification are calculated from changes in fluorescence signal over time and, as the measurement is non-destructive and fully reversible (pH-sensitive reagent is not consumed), measurement of time-courses and multiple drug treatments are possible.
Notes	Learn more about the full range of assays to measure glycolysis, oxygen consumption, fatty acid oxidation and metabolic flux in live cells. Or review the full metabolism assay guide for other assays for metabolites, metabolic enzymes, mitochondrial function, and oxidative stress.
Platform	Microplate reader

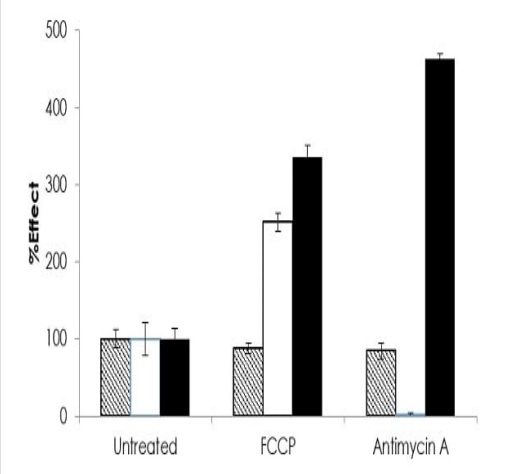
Properties

Storage instructions	Store at +4°C. Please refer to protocols.

Components	96 tests	4 x 96 tests
Glycolysis Assay Reagent (lyophilized)	1 vial	4 vials

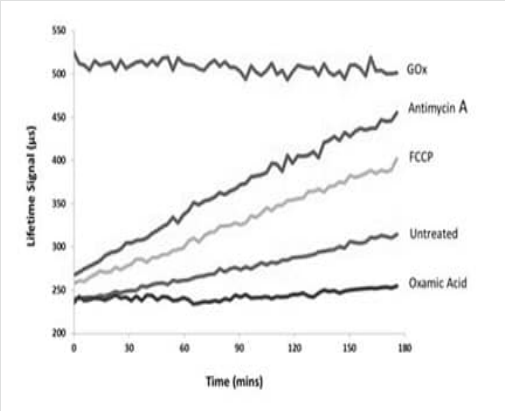
Components	96 tests	4 x 96 tests
Respiration Buffer	1 tablet	4 tablets

Images



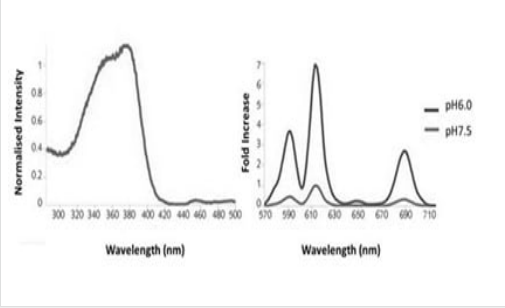
Simultaneous quantification of mitochondrial respiration and glycolytic flux

Cellular Energy Flux for HepG2 cells (seeded at 65,000 per well), treated with a combination of drug compounds modulating the ETC (Antimycin A [1 µM] and FCCP [2.5 µM]), shown as a percentage relative to untreated control cells. Comparative measurements were taken with Extracellular Oxygen Consumption Assay (ab197243) (white column) and Glycolysis Assay [Extracellular acidification] (ab197244) (black column) show the shift between mitochondrial respiration and glycolysis and the cellular control of energy (ATP; measured 1h post-treatment using Luminescent ATP Detection Assay kit (ab113849) (striped column)).



Typical lifetime profile

Typical Lifetime profile of Glycolysis Assay for adherent cells, treated with typical control compounds, including Oxamic acid recommended as a negative control. The effect of Glucose Oxidase as a positive signal control is illustrated schematically.



Excitation and emission spectra

Excitation and Emission spectra of Glycolysis Assay. Left panel shows normalized excitation (Ex 340 – 410nm; Peak 360-380nm). Right panel shows emission maxima (Em 590, 615 and 690nm) fold increase between pH6.0 and pH7.5.

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