

Glucose Uptake Assay Kit (Cell-based) ab204702

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Overview

Product name	Glucose Uptake Assay Kit (Cell-based)
Detection method	Fluorescent
Sample type	Adherent cells, Suspension cells
Assay type	Cell-based
Assay time	0h 40m
Species reactivity	Reacts with: Mammals, Other species
Product overview	<p>Glucose Uptake Assay Kit (Cell-based) (ab204702) is an easy-to-use, non-radioactive kit that allows imaging and accurate measurement of glucose uptake in cultured cells in response to insulin and growth factors.</p> <p>The glucose uptake assay protocol is based on a fluorescent glucose analog, which just like glucose can be taken up by cells through glucose transporters. However, this glucose analog cannot be fully utilized in glycolysis because of its modification and thus accumulates inside the cells. Fluorescence generated by the fluorescent glucose analog is proportional to the glucose uptake by the cells and can be used to measure glucose uptake using fluorescent microscopy and flow cytometry.</p> <p>The kit includes phloretin, a natural phenol that inhibits glucose uptake, to use with control samples.</p> <p>Glucose uptake assay protocol summary:</p> <ul style="list-style-type: none"> - remove cell culture media, and add glucose uptake mix to cells - incubate for 30 min at 37°C - collect cells and keep on ice - wash with analysis buffer - analyze with flow cytometer or fluorescent microscope
Notes	<p>This product is manufactured by BioVision, an Abcam company and was previously called K681 GluTracker™ Glucose Uptake Assay Kit (Cell-Based). K681-50 is the same size as the 50 test size of ab204702.</p>
Platform	Microplate reader, Fluor. microscope, Flow cyt.

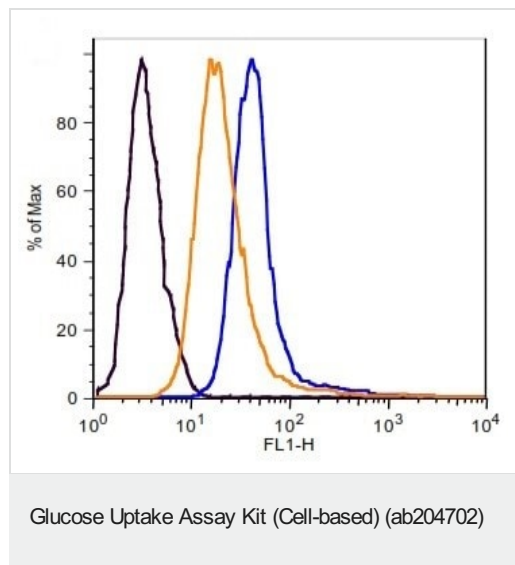
Properties

Storage instructions Store at -20°C. Please refer to protocols.

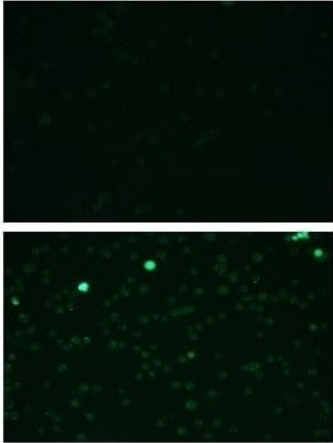
Components	50 tests
100X GluTracker Reagent	1 x 200µl
100X Phloretin	1 x 75µl
Buffer I	1 x 1.8ml
Glucose Uptake Enhancer	1 x 1ml

Relevance Glucose (C₆H₁₂O₆; FW: 180.16) is a ubiquitous energy source in most organisms, from bacteria to humans. The breakdown of carbohydrates produces mono- and disaccharides, most of which is glucose. Through glycolysis and TCA (citric acid cycle), glucose is oxidized to eventually form CO₂ and water, generating the universal energy molecule ATP. Glucose is a primary source of energy for the brain and a critical component in the production of proteins and in lipid metabolism and therefore measurement of glucose level is a key diagnostic parameter for many metabolic disorders.

Images

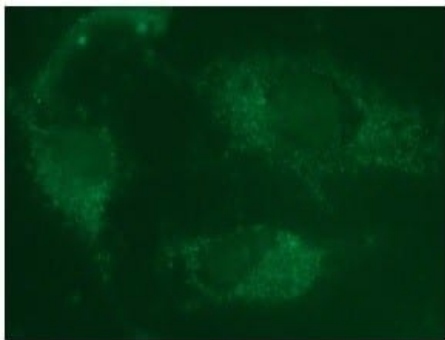


Comparison of histogram from flow analysis showing the inhibition of glucose uptake by phloretin in Jurkat cells (Black: negative control cells; orange: in the presence of phloretin; blue: without phloretin).



Images of Jurkat cells obtained using fluorescent microscope (Top: treated with phloretin; Bottom: without phloretin treatment).

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Glucose Uptake in HeLa cells: HeLa cells showing the uptake of GluTracker Reagent in the cytoplasm. Cells were stained with GluTracker Reagent for 30 minutes and fixed. Image was taken using a fluorescent microscope with a 60X objective lens.

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