Luminescent ATP Detection Assay Kit ab113849

Overview

Product name: Luminescent ATP Detection Assay Kit
Detection method: Luminescent
Assay type: Quantitative
Assay time: 0h 30m
Assay duration: Multiple steps standard assay

Product overview:
ATP bioluminescence assays measure the level of ATP within the cell by:
- lysing the cell sample
- adding luciferase enzyme and luciferin
- measuring emitted light using a tube or microplate-based luminometer.

Luminescent ATP Detection Assay Kit (ab113849) irreversibly inactivates ATP degrading enzymes (ATPases) during the lysis step, ensuring that the luminescent signal obtained truly corresponds to the endogenous levels of ATP.

Total levels of cellular ATP can be used to assess cell viability, cell proliferation and cytotoxicity of a wide range of compounds and biological response modifiers.

Review our cell health assays guide to learn more about our other cell viability, cytotoxicity and cell proliferation assay kits.

Tested applications:
Suitable for: Functional Studies

Platform:
Reagents

Properties

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

Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detergent</td>
<td>1 x 20ml</td>
</tr>
<tr>
<td>Lyophilized ATP standard</td>
<td>1 vial</td>
</tr>
<tr>
<td>Lyophilized substrate</td>
<td>3 vials</td>
</tr>
</tbody>
</table>

300 tests
Components
Substrate Buffer | 300 tests | 1 x 20ml

Applications
Our Abpromise guarantee covers the use of ab113849 in the following tested applications.
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Studies</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
</tr>
</tbody>
</table>

Images

The ATP standard curve was prepared as described in the protocol. Background-subtracted data values (mean +/- SD) are graphed.

Example of ATP standard curve using an opaque white plate

ab113849 ATP detection kit cytotoxicity data. 25000 HepG2 cells were seeded into each well, allowed to adhere and treated for 4 hours with 25µM rotenone and vehicle control (DMSO) in glucose based complete media. After treatment, cells were lysed, exposed to the ATP substrate solution and signal was measured on a luminescent counter. Mean and standard deviation is plotted for 3 replicates from each condition. Rotenone induces cytotoxicity in HepG2 cells.
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)).

Analysis of the release of ATP by connexin hemichannels in stem cells using ATP luminescence kit (ab113849).

Cells were cultured in HBSS to induce hemichannel opening. Calcium and GAP-inhibitor were used to trigger hemichannel closure.

After two hours the supernatant was collected and ATP was measured according to the protocol (detergent was also applied).

Calcium treatment and inhibition by GAP decreased ATP concentration, compared to HBSS control. Graph shows data of three independent experiments.

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