abcam

Product datasheet

Luminescent ATP Detection Assay Kit ab113849

★★★★★ 6 Abreviews 182 References 画像数 5

製品の概要

製品名	Luminescent ATP Detection Assay Kit
検出方法	Luminescent
サンプルの種類	Adherent cells, Suspension cells
アッセイタイプ	Quantitative
全工程の試験時間	0h 30m
製品の概要	Luminescent ATP Detection Assay Kit (ab113849) is used to measure the level of ATP within the cell. The luminescent ATP assay protocol involves lysis of the cell sample, addition of luciferase enzyme and luciferin, and measurement of the emitted light using a tube or microplate-based luminometer. This kit irreversibly inactivates ATP degrading enzymes (ATPases) during the lysis step, ensuring that the luminescent signal obtained truly corresponds to the endogenous levels of ATP. Luminescent ATP assay protocol summary: - add ATP standard into standard wells and media into control wells in same plate containing cells to be analyzed - add detergent solution and incubate for 5 min to lyse cells and stabilize ATP - add substrate solution and incubate for 5 min - store plate in dark for 10 min - analyze on luminescence plate reader **Special Handling Instructions for the ATP Detection Assay Kit** ATP can be found in cells and microbiota on many surfaces. To prevent unintended background, it is recommended to clean bench surfaces and all pipettes to be used during the experiment with 10% bleach. Use of gloves first cleaned by either using 70% ethanol or by changing them frequently is recommended. Use tips and containers that are clean and sterile, such as ATP and nuclease-free consumables. Do not leave reagents or the plate opened while working or during assay incubation
特記事項	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. We also offer a very popular alternative colorimetric/fluorometric **ATP assay kit ab83355** based on the phosphorylation of glycerol.

Related assays

Review the **cell health assay guide** to learn about kits to perform a **cell viability assay**, **cytotoxicity assay** and **cell proliferation assay**.

Review the **metabolism assay guide** to learn about assays for metabolites, metabolic enzymes, mitochondrial function, and oxidative stress, and also about how to assay metabolic function in live cells using your plate reader.

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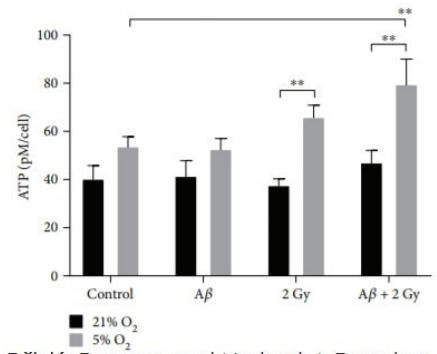
試験プラットフォーム Microplate reader

製品の特性

保存方法 Store at +4°C. Please refer to protocols.

内容	300 tests
Detergent	1 x 20ml
Lyophilized ATP standard	1 vial
Lyophilized substrate	3 vials
Substrate Buffer	1 x 20ml

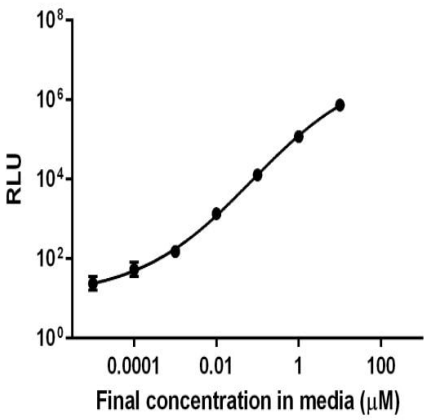
画像



Functional Studies - Luminescent ATP Detection Assay Kit (ab113849)

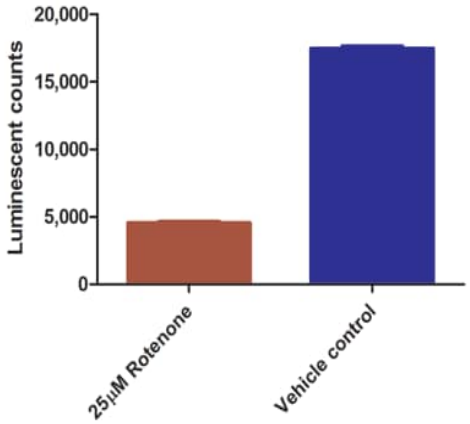
D?ini?, Tamara and Norbert A Dencher., Oxidative medicine and cellular longevity?vol. 2018 7567959., Fig 6, doi:10.1155/2018/7567959

Total cellular ATP concentration. ATP in SH-SY5Y cells cultivated at 21% and 5% O2 24 h after treatment with A? peptide and/or 18 h X-ray irradiation, normalized to cell count, and compared to respective controls. ATP concentration was about 1.3- to 1.8-fold higher at all conditions in cells cultivated at 5% O2 compared to 21% O2. Combination of A? peptide treatment and irradiation resulted in a significantly increased (~1.5-fold) ATP concentration at 5% O2 compared to the control. Samples were measured at least in duplicates (n = 2-4) in three independent experiments (N = 3). Mean ± SEM analyzed by two-way ANOVA with Tukey's multiple comparison test with p < 0 05 considered as significant. (**p < 0 01).



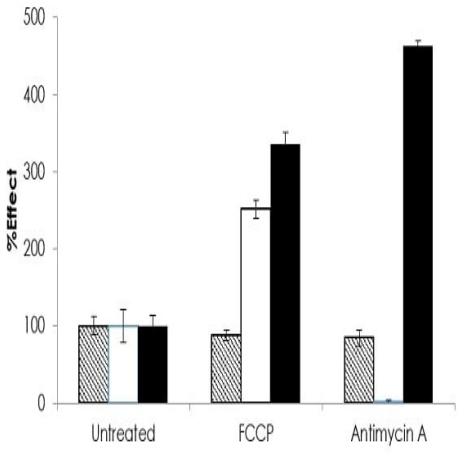
Example of ATP standard curve using an opaque white plate

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



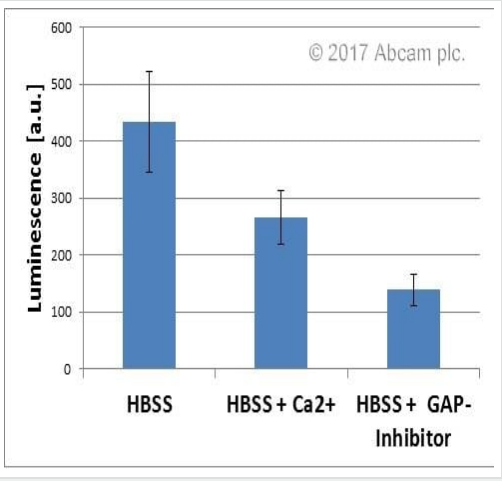
ATP Luminescence Assay using ab113849

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)).



Extracellular detection of ATP (ab113849)

This image is courtesy of an Abreview submitted by Heiko Lemcke.

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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