

ATP Assay Kit (Colorimetric/Fluorometric) ab83355

★★★★★ [5 Abreviews](#) [373 References](#) [8 Images](#)

Overview

Product name	ATP Assay Kit (Colorimetric/Fluorometric)
Detection method	Colorimetric/Fluorometric
Sample type	Urine, Serum, Plasma, Other biological fluids, Tissue Extracts, Cell Lysate
Assay type	Quantitative
Sensitivity	< 1 μ M
Assay time	1h 00m
Product overview	ATP Assay Kit (Colorimetric/Fluorometric) (ab83355) use a robust, simple method; the ATP assay protocol relies on the phosphorylation of glycerol to generate a product that is easily quantified by colorimetric (ODmax = 570 nm) or fluorometric (Ex/Em = 535/587 nm) methods.

This kit can detect as low as 1 μ M of ATP in various samples.

ATP assay protocol summary:

- add samples (deproteinized) and standards to wells
- add reaction mix and incubate for 30 min at room temp
- analyze with microplate reader

Chinese protocol available. See protocols section below.

If you require a more sensitive product, we recommend **[Luminescent ATP Detection Assay Kit \(ab113849\)](#)**, which can detect as low as 1 pM of ATP.

Notes This product is manufactured by BioVision, an Abcam company and was previously called K354 ATP Colorimetric/Fluorometric Assay Kit. K354-100 is the same size as the 100 test size of ab83355.

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.

How other researchers have used ATP Assay Kit ab83355

This ATP assay kit has been used in publications in a variety of sample types, including:

- Human: cell culture lysates¹, primary monocyte cell culture lysates², HCT116 cell culture supernatants³
- Mouse: heart tissue⁴, liver⁵, C2C12 and L929 cell lysates⁶, primary thymocyte cell culture lysates⁷, cardiac tissue⁸
- Rat: primary hippocampal neuron cell culture lysates⁹, liver tissue¹⁰, skeletal muscle¹¹
- Pig: kidney cell culture lysates¹², heart tissue¹³
- *C. elegans* tissue¹⁴
- *Chlamydomonas reinhardtii* algae¹⁵

References: 1 - Civallero Met al 2017, Na JY et al 2018, 2Gkirtzimanaki K et al 2018, 3Yang et al 2018; 4 - Singh SP et al 2018; 5 - Han SJ et al 2018; 6 - Alhindi Y et al 2019, Gregorczyk KP et al 2018; 7 - Simula L et al 2018; 8 - Litt MJ et al 2017, Samokhvalov V et al 2018; 9 - Zhao X et al 2018; 10 - Jing R et al 2018; 11 - Trinchese G et al 2018; 12 - Zou X et al 2018; 13 - Yuan F et al 2018; 14 - Pandey et al 2018; 15 - Ramanan R et al 2018

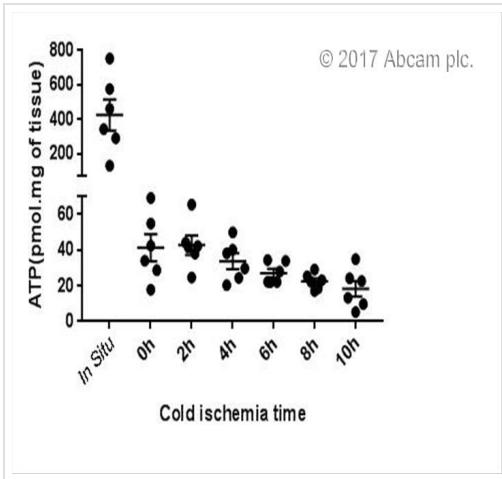
Platform Microplate reader

Properties

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

Components	100 tests	2000 tests
Assay Buffer XXIII	1 x 25ml	20 x 25ml
ATP Standard	1 vial	20 vials
Converting Enzyme I	1 vial	20 vials
Developer IV	1 vial	20 vials
OxiRed™ Probe	1 x 200µl	20 x 200µl

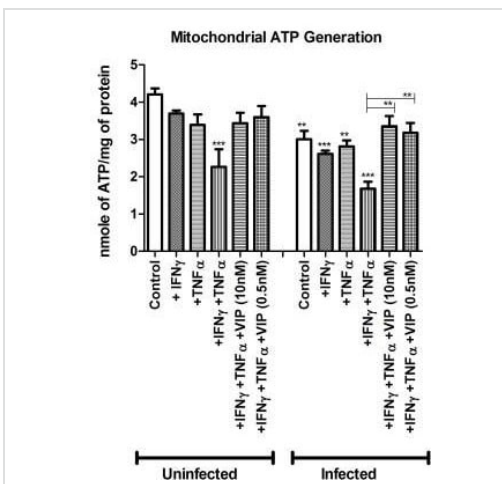
Images



ATP levels in Pancreatic Islet

Image courtesy of Mrs. Fotini Mouth

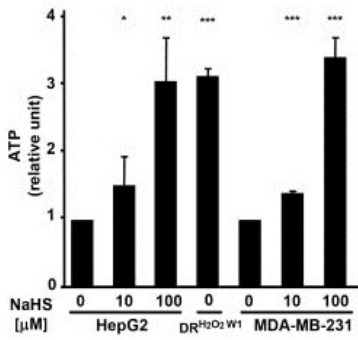
Ab83355 was used to determine ATP levels in rat pancreas islets as an ischemic marker to predict transplantation outcomes. We extracted ATP from fresh pancreas that have undergone different times of cold ischemia: 0, 2, 4, 6, 8 and 10h and *in situ*. ATP was extracted in Perchloric acid (PCA-2M) and ground using a Polytron. PCA was removed using potassium hydroxide (KOH – 2M) and pH was adjusted around 7-8. Samples were conserved at -80°C before utilization.



ATP assay used to study mitochondrial dysfunction after *C. rodentium* infection in mice

Image courtesy of Maiti AK et al. PLoS One. 2018; 13(9): e0204567. doi: 10.1371/journal.pone.0204567

Maiti AK et al (2018) used ATP assay kit ab83355 to measure mitochondrial ATP generation in an *in vitro* mouse intestinal model treated with cytokines in the presence and absence of VIP (vasoactive intestinal peptide). VIP was induced by *C. rodentium* infection and cytokines.

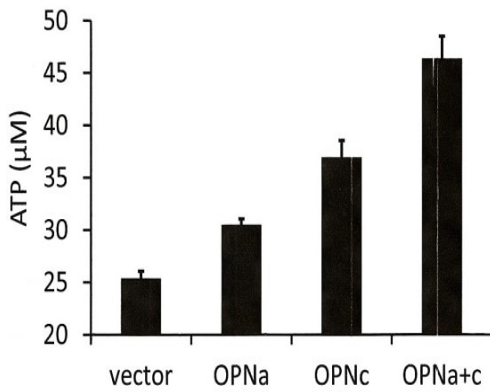


Sanokawa-Akakura R et al., PLoS One 9:e108537 (2014).

ATP assay performed with ab83355

Sanokawa-Akakura R et al., PLoS One 9(9), fig4b. doi: 10.1371/journal.pone.0108537 Reproduced under the Creative Commons license <http://creativecommons.org/licenses/by/4.0/>

The chart shows a comparison of ATP levels of HepG2 treated with 0, 10 and 100 μM for 48 hours, DR^{H2O2}W1 (damage recovered cells using hydrogen peroxide with a recovery time of one week) HepG2 cells and MDA-MB-231 cells treated with 0, 10 and 100 μM of NaHS for 48 hours. Data is shown as percent of ATP levels in untreated cells. ATP levels were determined using ATP assay kit (ab83355).

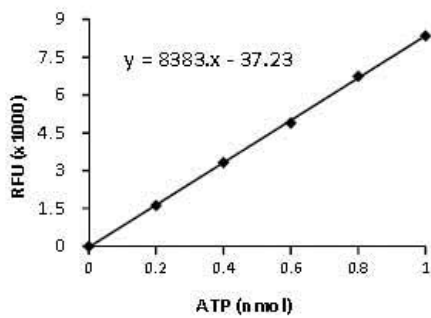


Shi Z et al., PLoS One 9:e105675 (2014).

ATP assay performed with ab83355

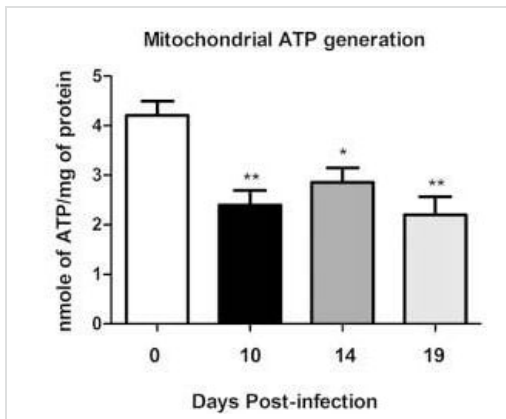
Image from Shi Z et al., PLoS One 9(8), Fig 2 doi: 10.1371/journal.pone.0105675. Reproduced under the Creative Commons license <http://creativecommons.org/licenses/by/4.0/>

MCF-7 cells are transfected with vector, osteopontin-a, osteopontin-c or osteopontin-a plus -c. Cells are plated on poly-HEMA and seeded at 4×10^5 cells per well and incubated for two days under standard culture conditions. ATP levels are measured using ATP assay kit (ab83355).



ATP assay performed with ab83355

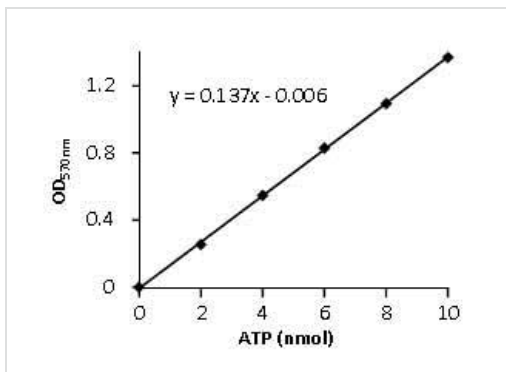
Example of fluorometric ATP assay standard curve.



ATP levels measured in mouse colon tissue

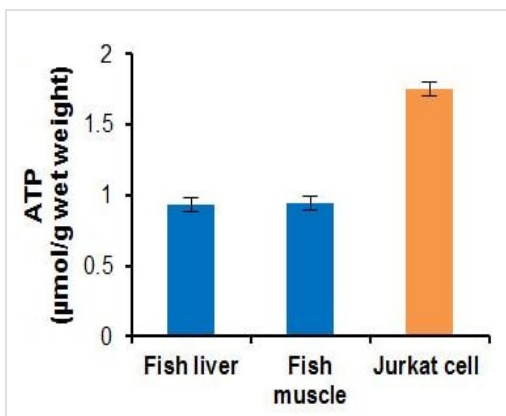
Image courtesy of Maiti AK et al. Sci Rep. 2015; 5: 1543. doi: 10.1038/srep15434. Reproduced under the Creative Commons License <http://creativecommons.org/licenses/by/4.0/>

Maiti AK et al. (2015) used ATP assay kit [ab113852](#) to measure mitochondrial ATP generation in murine distal colon after *C. rodentium* infection.



Example of colorimetric ATP assay standard curve.

ATP assay performed with ab83355



Quantitation of ATP in fish liver (2.5µl of 10 times diluted sample), fish muscle (5µl of 10 times diluted sample) and Jurkat cell lysate (5 ul) using fluorometric assay. Samples were spiked with known amounts of ATP (300pmol).

ATP assay performed with ab83355

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet

- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours

- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit <https://www.abcam.com/abpromise> or contact our technical team.

Terms and conditions

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors