abcam

Product datasheet

ATP Assay Kit (Colorimetric/Fluorometric) ab83355

5 Abreviews 198 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 µM
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 µM 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 lysates[1], primary monocyte cell culture lysates[2], HCT116 cell culture supernatants[3]
- Mouse: heart tissue[4], liver[5], C2C12 and L929 cell lysates[6], primary thymocyte cell culture lysates[7], cardiac tissue[8]
- Rat: primary hippocampal neuron cell culture lysates[9], liver tissue[10], skeletal muscle[11]
- Pig: kidney cell culture lysates[12], heart tissue[13]
- C elegans tissue[14]
- *Chlamydomonas reinhardtii* algae[15]

References: 1 - Civallero M et 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

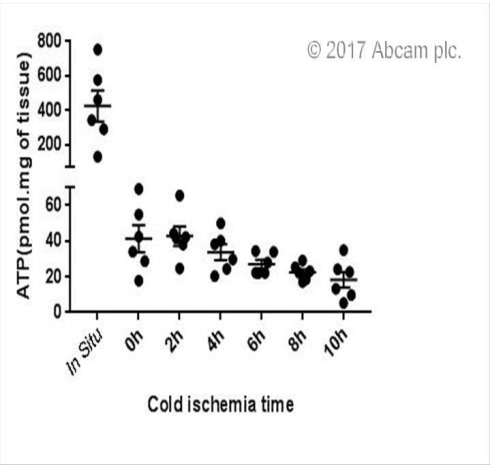
Platform Microplate reader

Properties

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

Components	Identifier	100 tests	2000 tests
ATP Assay Buffer	WM	1 x 25ml	20 x 25ml
ATP Converter (lyophilized)	Blue	1 vial	20 vials
ATP Probe (in DMSO)	Red	1 x 200µl	20 x 200µl
ATP Standard (1 µmol; lyophilized)	Yellow	1 vial	20 vials
Developer Mix (lyophilized)	Green	1 vial	20 vials

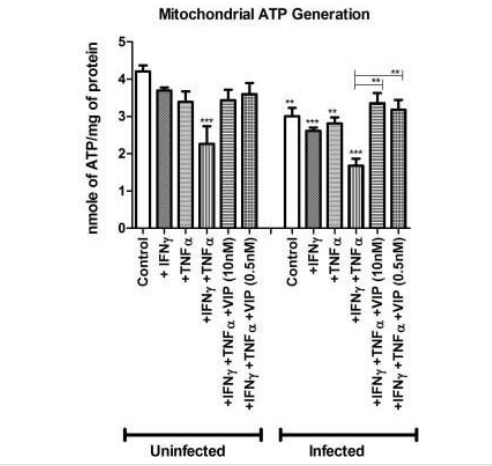
Images



ATP levels in Pancreatic Islet

Image courtesy of Mrs. Fotini Mouth

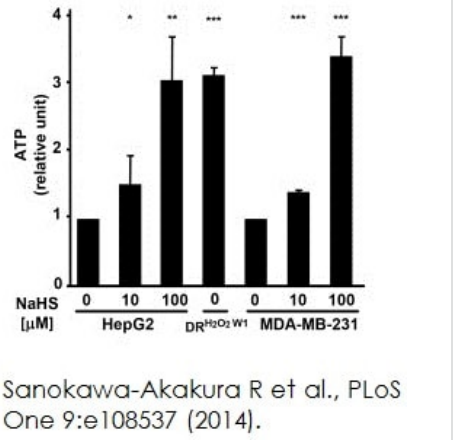
Ab83355 was used to determin ATP levels in rat pancreas islets as an ischemic marker to predict transplantation outcomes. We extracted ATP from fresh pancreas that have undergo different time of cold ischemia : 0, 2, 4, 6, 8 and 10h and in situ. ATP were extracted in Perchloric acid (PCA-2M) and grind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



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

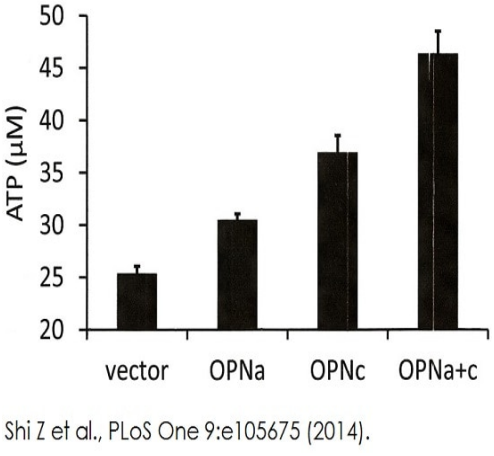
Image courtesy of Maiti AK et al. PLoS One. 2018; 13(9): e0204567. doi: 10.1371/journal.pone.0204567

Maiti AK et al (2018) used ATP assay kit ab83355 to measure mitochondrial ATP generation in an i*n 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.



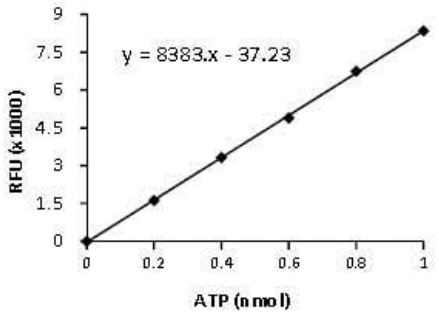
The chart shows a comparison of ATP levels of HepG2 treated with 0, 10 and 100 µM for 48 hours, $DR^{H2O2\ W1}$ (damage recovered cells using hydrogen peroxide with a recovery time of one week) HepG2 cells and MDA-MB-231 cells treated with 0, 10 and 100 µM of NaHS for 48 hours. Data is shown as percent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

ATP assay performed with ab83355



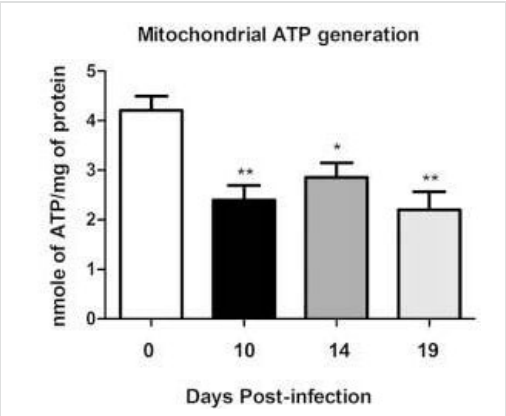
MCF-7 cells are transfected with vector, osteopontin-a, osteopontin-c or osteopontin -a plus -c. Cells are plated on poly-HEMA and seeded at 4 x 10^5 cells per well and incubated for two days under standard culture conditions. ATP levels are measured using ATP assay kit (ab83355).

ATP assay performed with ab83355



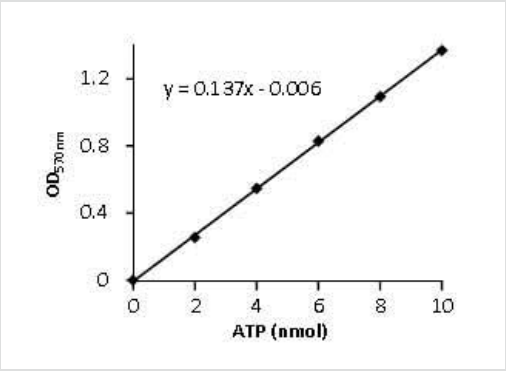
Example of fluorometric ATP assay standard curve.

ATP assay performed with ab83355



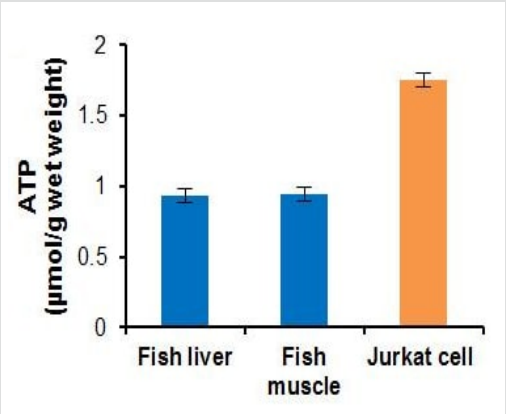
ATP levels measured in mouse colon tissue

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



ATP assay performed with ab83355

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).

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