

ATP assay kit

ATP Assay Kit

CATALOG #
AAA44694

PRODUCT SYNONYMS

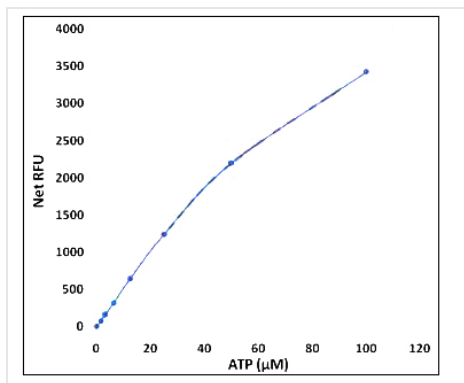
ATP; ATP Assay Kit; ATP assay kit

PRODUCT SPECIFICATIONS

Detection Method

Fluorometric

IMAGES



Standard Curve (Sample)

ADDITIONAL INFORMATION

Related Product Information for ATP assay kit

Background: Adenosine triphosphate (ATP) is an organic molecule that provides energy for various cell processes such as enzymatic reactions leading to nerve impulses, muscle contraction, and synthesis of chemicals. ATP is found in all life forms and is classified as a nucleoside triphosphate consisting of three components: a nitrogenous base (adenine), the sugar ribose, and the triphosphate group. It is produced in animals from serial enzymatic reactions such as glycolysis or oxidative phosphorylation. In plants, sunlight is converted into ATP through a process known as photosynthesis. When used up metabolically, ATP is converted either to adenosine diphosphate (ADP) or to adenosine monophosphate (AMP). Other enzymatic reactions occur to regenerate ATP (which is also a precursor to DNA and RNA) and additionally ATP is used as a coenzyme. The ATP Assay Kit is a simple fluorometric assay that measures the amount of total ATP present in biological samples in a 96-well microtiter plate format. Each kit provides sufficient reagents to perform up to 100 assays*, including blanks, ATP standards, and unknown samples. Sample ATP concentrations are determined by comparison with a known ATP standard. The kit has a detection sensitivity limit of 1.56 uM ATP.

Principle of the Assay: The ATP Assay Kit measures total ATP within biological samples. ATP and glycerol are converted by glycerol kinase to ADP and glycerol-3-phosphate. Glycerol-3-phosphate and oxygen are then converted by glycerol-3-phosphate oxidase to glycero phosphate and hydrogen peroxide. The resulting hydrogen peroxide is then detected with a highly specific fluorometric probe. Horseradish peroxidase catalyzes the reaction between the probe and hydrogen peroxide, which bind in a 1:1 ratio. Samples are compared to a known concentration of ATP standard within the 96-well microtiter plate format. Samples and standards are incubated for 30 minutes and then read with a standard 96-well fluorometric plate reader (Figure 1).

Product Categories/Family for ATP assay kit

Metabolism Research; Carbohydrate Metabolism; ATP Assay Kit

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

AAA Biotech | Tel: +1 (619) 604-9440 | Fax: +1 (619) 604-9441 | contact@aaabiotech.com
Online datasheet: <https://stage.aaabiotech.com/assay-kits/atp/44694>