CREATIVE BIOMART®
Assay Kit

ATP Bioluminescence Assay Kit HS II

Product Information

Cat.No. Kit-0113

Product Overview

Living things require a continual input of free energy for three major purposes: the performance of mechanical work in muscle contraction and other cellular movements, the active transport of molecules and ions, and the synthesis of macromolecules and other biomolecules from simple precursors.The free energy used in these processes, which maintains an organism in a state that is far from equilibrium, is derived from the environment. In most processes, this special carrier of free energy is adenosine triphosphate (ATP). ATP is an energy-rich molecule because its triphosphate unit contains two phosphoanhydride bonds. The turnover of ATP is very high. Motion, active transport, signal amplification, and biosynthesis (as is needed for cell proliferation) can occur only if ATP is continuously regenerated from ADP. Therefore, measurement of ATP can serve as a marker for cell proliferation.The determination of ATP using bioluminescence is a well established technique. It uses the ATP dependency of the light-emitting, luciferase-catalyzed oxidation of luciferin for the measurement of extremely low concentrations of ATP.

Description

The ATP Bioluminescence Assay Kit HS II is specially developed for the highest-sensitivity detection of ATP. Due to the high concentration of luciferase in the assay, the reaction exhibits a peak kinetic. If ATP determinations are performed to obtain kinetic data of the enzymes involved (e.g., for metabolic studies or if coupled enzymatic assays are applied), the use of the ATP Bioluminescence Assay Kit CLS II (generating a constant light signal) is highly recommended.

Applications

Highly sensitive and quantitative determination of ATP. Contains a cell lysis reagent and can be applied for the detection of microbial contamination. The kit is well suited for use in tube luminometers and microplate-format luminometers. The cell lysis reagent exhibits good lysis efficiency with respect to a variety of eukaryotic and prokaryotic cells.For a time constant light signal, use the ATP Bioluminescence Assay Kit CLS II.

Storage

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Stable at -15 to -25°C

Kit Components

1. Luciferase Reagent, lyophilized, aliquoted;2. ATP Standard, 5 x approximately 10 mg lyophilized, aliquoted;3. Cell Lysis Reagent, ready-to-use;4. Dilution Buffer, ready-to-use.

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