CREATIVE BIOMART®
Assay Kit

ATP Bioluminescence Assay Kit CLS II

Product Information

Cat.No. Kit-0112

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 CLS II is specially developed for applications in which constant light signals are required for kinetic studies of enzymes and metabolic studies, or if coupled enzymatic assays are applied. If ATP determinations are manually started, the CLS Kit provides high reproducibility due to the constant signal generation. However, the sensitivity of the kit is lower by a factor of 10 as compared to the ATP Bioluminescence Assay Kit HS II, which is recommended for determinations in the high-sensitivity range. The ATP Bioluminescence Assay Kit HS II also contains an efficient cell lysis reagent, and can be used for the detection of ATP in microorganisms or animal cells.

Applications

The ATP Bioluminescence Assay Kit CLS II is optimized for easy use in tube luminometers and microplate-format luminometers. The kit exhibits a constant light signal that is sustained for several minutes. The kit is well suited for kinetic studies and ATP determinations in coupled enzymatic

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ATP Bioluminescence Assay Kit CLS II

reactions.For more highly sensitive ATP determinations, use the ATP Bioluminescence Assay Kit HS II.

Storage

Stable at -15 to -25°C

Kit Components

1. Luciferase Reagent, lyophilized, aliquoted;2. ATP Standard, lyophilized (for calibration), aliquoted.

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