ATP synthase Enzyme Activity Microplate Assay Kit ab109714

Overview

Product name: ATP synthase Enzyme Activity Microplate Assay Kit
Detection method: Colorimetric
Sample type: Cell culture extracts, Tissue, Suspension cells, Tissue Extracts, Cell Lysate, Purified mitochondria
Assay type: Enzyme activity
Assay time: 6h 00m
Species reactivity: Reacts with: Rat, Cow, Human
Does not react with: Mouse

Product overview: ATP synthase Enzyme Activity Microplate Assay Kit ab109714 is used to determine the activity of ATP synthase (Complex V) in a human or rat sample.

The ATP synthase enzyme is immunocaptured within the wells of the microplate and the enzyme activity is measured by monitoring the decrease in absorbance at 340 nm. The conversion of ATP to ADP by ATP synthase is coupled to the oxidation reaction of NADH to NAD⁺ with a reduction in absorbance at 340 nm.

Platform: Microplate reader

Properties

Storage instructions: Please refer to protocols.

<table>
<thead>
<tr>
<th>Components</th>
<th>Identifier</th>
<th>96 tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATP synthase precoated Microtiter plate</td>
<td>1 unit</td>
<td></td>
</tr>
<tr>
<td>Buffer</td>
<td>Tube 1</td>
<td>1 x 10ml</td>
</tr>
<tr>
<td>Detergent</td>
<td>1 x 1ml</td>
<td></td>
</tr>
</tbody>
</table>
Examples of activity/load relationships for cultured cell lysate, rat liver mitochondria, and bovine heart mitochondria.

Functional study using ATP synthase Enzyme Activity Microplate Assay Kit (ab109714).
Mitochondrial fractions from the heart tissue of Rats infected by S. pneumoniae, or given PBS sham control, were subjected to measurements of complex I-V activities. Complex I was measured with ab109721 (top left), Complex II + III were measured using ab109905 (top right), Complex IV was measured using ab109911 (bottom left) and Complex V was measured using ab109714 (bottom right).

Freshly isolated mitochondrial pellets were resuspended in PBS supplemented with 10% detergent provided in the kits. Protein concentrations of these mitochondrial lysates were estimated and 25 μg (for complex I, IV and V) or 100 μg (for complex II+III) mitochondrial protein was used per reaction. Enzyme activities were measured spectrophotometrically in triplicate and expressed as changes of absorbance per minute per mg protein.

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