Glutathione Reductase (GR) Assay Kit ab83461

Overview

Product name: Glutathione Reductase (GR) Assay Kit
Detection method: Colorimetric
Sample type: Urine, Serum, Plasma, Other biological fluids, Tissue Extracts, Cell Lysate
Assay type: Enzyme activity
Sensitivity: > 0.1 mU/ml
Range: 0.1 mU/ml - 40 mU/ml
Assay time: 0h 40m

Product overview

Glutathione Reductase Assay Kit (ab83461) is a highly sensitive, simple, direct and HTS-ready colorimetric assay for measuring GR activity in biological samples. In the assay, GR reduces GSSG to GSH, which reacts with 5, 5'-Dithiobis (2-nitrobenzoic acid) (DTNB) to generate TNB2-(yellow color, λmax = 405 nm). The assay can detect 0.1-40 mU/ml GR in various samples.

Notes

Glutathione Reductase (GR, EC 1.8.1.7) catalyzes the NADPH-dependent reduction of oxidized glutathione (GSSG) to reduced glutathione (GSH), which plays an important role in the GSH redox cycle that maintains adequate levels of reduced GSH. A high GSH/GSSG ratio is essential for protection against oxidative stress.

Related products

Review the oxidative stress marker and assay guide to learn about more assays for oxidative stress.

Platform

Microplate reader

Properties

Storage instructions

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

<table>
<thead>
<tr>
<th>Components</th>
<th>Identifier</th>
<th>200 tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalase (lyophilized)</td>
<td>Clear</td>
<td>1 x 1ng</td>
</tr>
<tr>
<td>DTNB (lyophilized)</td>
<td>Red</td>
<td>1 vial</td>
</tr>
<tr>
<td>GR Assay Buffer</td>
<td>NM</td>
<td>1 x 100ml</td>
</tr>
</tbody>
</table>
## Components

<table>
<thead>
<tr>
<th>Components</th>
<th>Identifier</th>
<th>200 tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>GR Positive Control (10 mU; lyophilized)</td>
<td>Green</td>
<td>1 vial</td>
</tr>
<tr>
<td>GSSG (lyophilized)</td>
<td>Yellow</td>
<td>1 vial</td>
</tr>
<tr>
<td>Hydrogen peroxide</td>
<td>Orange</td>
<td>1 x 1 ml</td>
</tr>
<tr>
<td>NADPH-GNERAT™ (lyophilized)</td>
<td>Blue</td>
<td>2 vials</td>
</tr>
<tr>
<td>TNB Standard (2.5 μmol)</td>
<td>Brown</td>
<td>1 x 1 ng</td>
</tr>
</tbody>
</table>

### Relevance

Glutathione Reductase (GR, EC 1.8.1.7) catalyzes the NADPH-dependent reduction of oxidized glutathione (GSSG) to reduced glutathione (GSH), which plays an important role in the GSH redox cycle that maintains adequate levels of reduced GSH. A high GSH/GSSG ratio is essential for protection against oxidative stress.

### Cellular localization

Cytoplasmic and Mitochondrial

### Images

ICAC decreased the ROS level induced by EV71 infection via modulating the antioxidant enzymes involved in GSH metabolism. Infected (100 TCID50 EV71) Vero cells were treated with medium or 100 μM ICAC for 12 h. Uninfected cells were used as the control group. The antioxidant enzymes activities of the Vero cells were detected (n = 3). All results were expressed as the means ± SEs. Asterisks indicate that the data significantly differ from the EV71 group at the P < 0.05 level according to one-way analysis of variance.
Glutathione reductase measured in mouse tissue lysates showing activity (mU) per mg of extracted protein ($T_1=2$ min; $T_2=30$ min).

Glutathione reductase measured in cell lysates (mU) per $10^6$ cells ($T_1=2$ min; $T_2=30$ min)

Glutathione reductase measured in human plasma and serum ($T_1=2$ min; $T_2=30$ min) showing activity (mU) per ml of tested sample. No activity was detected in saliva or urine.
Glutathione Reductase assay time line using ab83461.

TNB Standard Curve using ab83461.

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES".

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