**Overview**

**Product name**  
NQO1 Activity Assay Kit

**Detection method**  
Colorimetric

**Precision**

<table>
<thead>
<tr>
<th>Sample</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>CV%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>3</td>
<td></td>
<td></td>
<td>2.183%</td>
</tr>
</tbody>
</table>

**Sample type**  
Cell culture extracts, Adherent cells, Suspension cells, Tissue Extracts, Cell Lysate, Tissue Homogenate, Tissue Lysate

**Assay type**  
Enzyme activity

**Assay time**  
0h 30m

**Species reactivity**  
Reacts with: Mouse, Rat, Cow, Human

**Product overview**  
NQO1 Activity Assay kit (ab184867) is designed for the sensitive and accurate measurement of NQO1 (NAD(P)H dehydrogenase [quinone] 1) activity.

The enzyme activity is determined by following the reduction of Menadione with cofactor NADH and the simultaneous reduction of WST1 which leads to increased absorbance at 440 nm. Dicoumarol is used as an inhibitor of NQO1 as part of the assay.

NQO1 assay protocol summary:
- add samples to wells
- add reaction buffer + inhibitor and reaction buffer to separate sample wells
- analyze with a microplate reader for 5 min

**Notes**  
NQO1 serves as a quinone reductase in connection with conjugation reactions of hydroquinones involved in detoxification pathways, NQO1 protects against quinone-induced damage by competing with potentially toxic one-electron pathways. It also functions in biosynthetic processes such as the vitamin K-dependent gamma-carboxylation of glutamate residues in prothrombin.
**Platform**
Microplate reader

**Properties**

**Storage instructions**
Store at -20°C. Please refer to protocols.

<table>
<thead>
<tr>
<th>Components</th>
<th>1 x 96 tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000X Cofactor (lyophilized)</td>
<td>1 vial</td>
</tr>
<tr>
<td>1000X Inhibitor (lyophilized)</td>
<td>1 vial</td>
</tr>
<tr>
<td>100X Dye (lyophilized)</td>
<td>1 vial</td>
</tr>
<tr>
<td>20X Basic Buffer</td>
<td>1 x 3ml</td>
</tr>
<tr>
<td>2X Extraction Buffer</td>
<td>1 x 15ml</td>
</tr>
<tr>
<td>5000X Menadione</td>
<td>1 x 100µl</td>
</tr>
<tr>
<td>500X NADH (lyophilized)</td>
<td>1 vial</td>
</tr>
<tr>
<td>96-well Microplate</td>
<td>2 units</td>
</tr>
</tbody>
</table>

**Cellular localization**
Cytoplasmic

**Images**
An example is shown below where the rate/slope is calculated between these time points.

Raw data from various concentrations of HepG2 cell extracts.
This raw data is expressed as rate (mOD/min) per microgram of cell extract added per well as shown above. The molar extinction coefficient factor for the WST1 dye is 25.9/mM/well.

Figure 3a

Raw data of NQO1 activity from 50 µg/mL of a series of normal samples.
Comparison of NQO1 activity in different samples at 50 ug/mL.

Figure 3b

Dicoumarol sensitive NQO1 activity/total activity in a series of normal cell lysates at 50 ug/mL.

Figure 3c

NQO1 activity assay components requirement test.

Figure 4

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