

NQO1 Activity Assay Kit ab184867

[13 References](#) [6 Images](#)

Overview

Product name NQO1 Activity Assay Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Overall	3			2.183%

Inter-assay

Sample	n	Mean	SD	CV%
Overall	9			6.035%

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

synthesis.

Platform

Microplate reader

Properties

Storage instructions

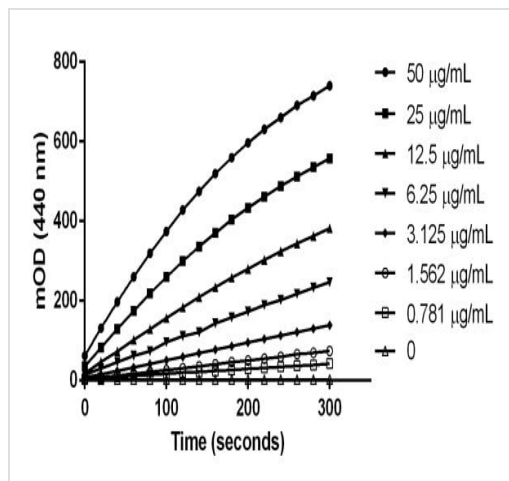
Store at -20°C. Please refer to protocols.

Components	1 x 96 tests
1000X Cofactor (lyophilized)	1 vial
1000X Inhibitor (lyophilized)	1 vial
100X Dye (lyophilized)	1 vial
20X Basic Buffer	1 x 3ml
2X Extraction Buffer	1 x 15ml
5000X Menadione	1 x 100µl
500X NADH (lyophilized)	1 vial
96-well Microplate	2 units

Cellular localization

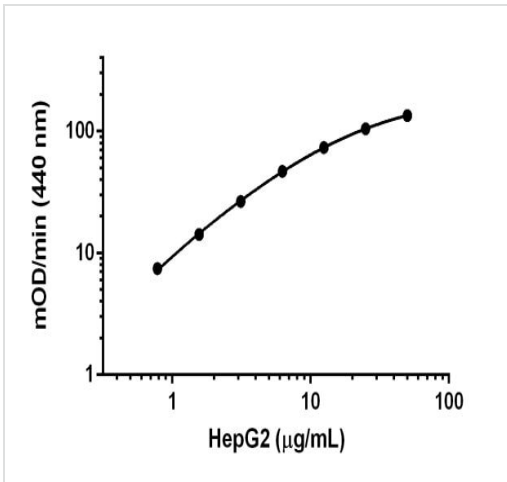
Cytoplasmic

Images



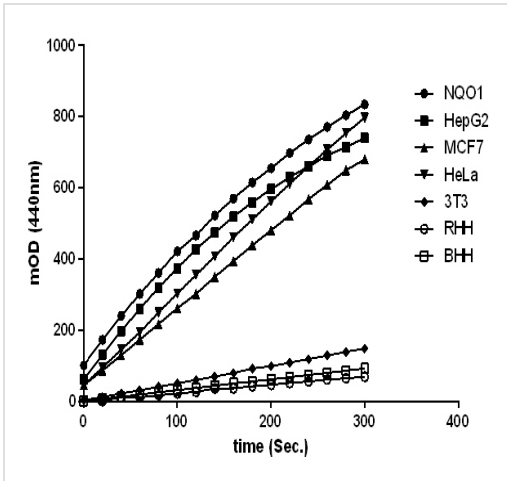
An example is shown below where the rate/slope is calculated between these time points.

Raw data from various concentrations of HepG2 cell extracts.



NQO1 Activity in HepG2 extract.

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.



Raw data of NQO1 activity from 50 µg/mL of a series of normal samples.

Figure 3a

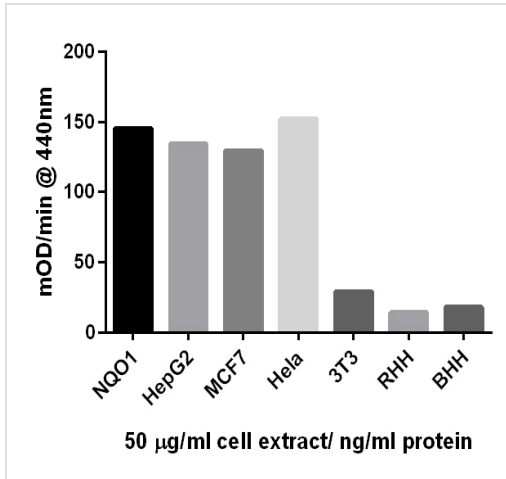


Figure 3b

Comparison of NQO1 activity in different samples at 50 ug/mL

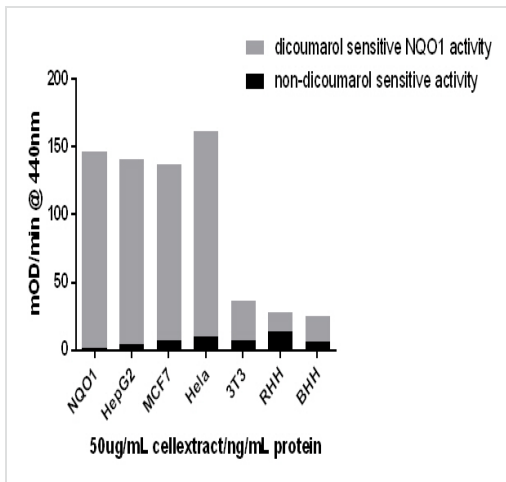


Figure 3c

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

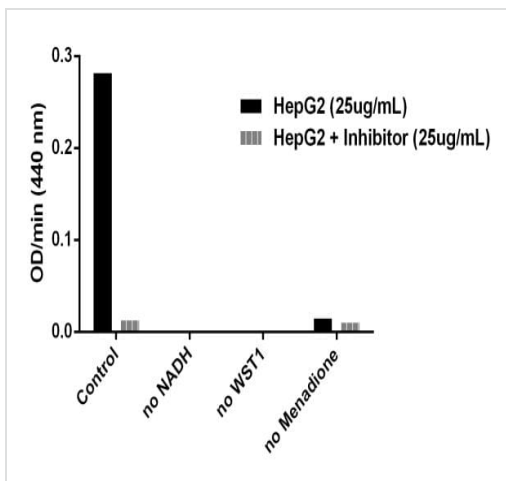


Figure 4

NQO1 activity assay components requirement test.

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