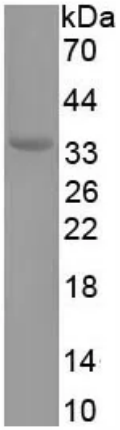
Active NADH Dehydrogenase, Quinone 1 (NQO1)

Catalog#:PER13000

概述（Summary）

别称（Alternative Names）	DHQU; DIA4; DTD; NMOR1; NMORI; QR1; Azoreductase; DT-diaphorase; Menadione reductase; Phylloquinone reductase; Quinone reductase 1; NAD(P)H:quinone oxidoreductase 1
纯度（Purity）	Greater than 90% as determined by reducing SDS-PAGE.
内毒素（Endotoxin level）	Please contact with the lab for this information
蛋白构建（Construction）	【Ala2-Arg273】
Accession #	P05982
表达宿主（Host）	E.coli
种属（Species）	Rattus norvegicus (Rat)
预测分子量（Predicted MW）	34.4 kDa
制剂（Form）	Lyophilized from a 0.2 μm filtered solution of PBS, pH7.4, containing 0.01% SKL, 1mM DTT, 5% Trehalose and Proclin300.
运输方式（Shipping）	The product is shipped with ice bag. Upon receipt, store it immediately at the temperature listed below.
稳定性&储存（Stability &Storage）	12 months at -20°C to -80°C in lyophilized state.6 months at -20°C to -80°C under sterile conditions after reconstitution.7-10 days at 2°C to 8°C under sterile conditions after reconstitution.Please minimize freeze-thaw cycles.
复溶（Reconstitution）	Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.
背景介绍（References）	The enzyme apparently serves as a quinone reductase in connection with conjugation reactions of hydroquinons involved in detoxification pathways as well as in biosynthetic processes such as the vitamin K-dependent gamma-carboxylation of glutamate residues in prothrombin synthesis.

电泳图（SDS-PAGE image）



Greater than 90% as determined by reducing SDS-PAGE.

活性图（Bioactivity image）

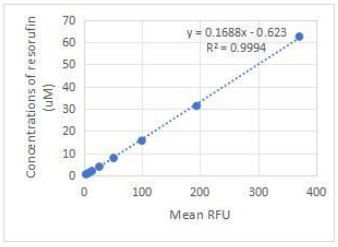


Figure 1. The standard curve of resorufin

RFU	resorufin (uM)
370.32992	62.5
193.92992	31.25
99.67992	15.625
51.23992	7.8125
26.69992	3.90625
13.93992	1.953125
7.57492	0.9765625
3.79692	0.48828125

One unit of enzyme activity is defined as the 1 µg of enzyme required to convert 1 pmol of resazurin in 1min.

Specific Activity (pmol/min/µg)= $\frac{\Delta OD * F}{T * N}$

△OD=Adjusted for Substrate Blank

F=Conversion Factor (convert from standard curve of resorufin)

T= Time

NAD(P)H:quinone acceptor oxidoreductase 1 (NQO1), also known as DT-diaphorase, is a widely-distributed FAD-dependent flavoprotein that promotes 2-electron reductions of quinones, quinoneimines, nitroaromatics, and azo dyes. As a result it prevents the one electron reduction of quinones that results in the production of radical species. NQO1 is a highly-inducible enzyme that is regulated by the Keap1/Nrf2/ARE pathway. The increase and decrease of NQO1 levels are associated with decreased and increased susceptibilities to oxidative stress, respectively. Thus, NQO1 is a marker cytoprotective enzyme in oxidative stress. Independently of its catalytic function, NQO1 plays a role in regulating the proteosomal degradation of p53, p73a, and p33. NQO1 physically interacts with p53 and p73 in an NADH-dependent manner and protects them from 20S proteasomal degradation in a ubiquitin independent pathway. The activity assay of recombinant rat NQO1 was measured by its ability to oxidize the substrate resazurin to resorufin. The rrNQO1 was diluted to 0.05 ug/ml in the assay buffer 50 mM HEPES, 0.2 M NaCl, 5 µM FAD, 0.05% Tween® 20, pH 7.5. 50 ul 0.05 ug/ml rhNQO1 was added into the microplate and start the reaction by adding 50 µl substrate mixture of 400 uM beta-NADH and 20 uM resazurin which was diluted in assay buffer. Read at excitation and emission wavelengths of 540 nm and 585 nm (top read), respectively, in kinetic mode for 5 minutes. The specific activity of recombinant rat NQO1 is >45000 pmol/min/µg.

注意事项（Note）

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