

**NQO1 Antibody**  
**Rabbit Polyclonal Antibody**  
**Catalog # ABV10483****Specification**

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**NQO1 Antibody - Product Information**

Application	WB
Primary Accession	<a href="#">P15559</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	30868

**NQO1 Antibody - Additional Information****Gene ID** 1728

Positive Control	Western blot: 3T3 cell lysate, rat kidney cell lysate
Application & Usage	Western blot: 1:200
<b>Other Names</b>	
Azoreductase, DT-diaphorase, Menadione reductase, NAD (P) H, quinine oxidoreductase 1	

**Target/Specificity**  
NQO1**Antibody Form**  
Liquid**Appearance**  
Colorless liquid**Formulation**  
100 µg (0.5 mg/ml) of antibody in PBS, 0.01 % BSA, 0.01 % thimerosal, and 50 % glycerol, pH 7.2**Handling**  
The antibody solution should be gently mixed before use.**Reconstitution & Storage**  
-20 °C**Background Descriptions****Precautions**  
NQO1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.**NQO1 Antibody - Protein Information**

**Name** NQO1 {ECO:0000303|PubMed:1657151, ECO:0000312|HGNC:HGNC:2874}

### Function

Flavin-containing quinone reductase that catalyzes two- electron reduction of quinones to hydroquinones using either NADH or NADPH as electron donors. In a ping-pong kinetic mechanism, the electrons are sequentially transferred from NAD(P)H to flavin cofactor and then from reduced flavin to the quinone, bypassing the formation of semiquinone and reactive oxygen species (By similarity) (PubMed:<a href="http://www.uniprot.org/citations/8999809" target="\_blank">8999809</a>, PubMed:<a href="http://www.uniprot.org/citations/9271353" target="\_blank">9271353</a>). Regulates cellular redox state primarily through quinone detoxification. Reduces components of plasma membrane redox system such as coenzyme Q and vitamin quinones, producing antioxidant hydroquinone forms. In the process may function as superoxide scavenger to prevent hydroquinone oxidation and facilitate excretion (PubMed:<a href="http://www.uniprot.org/citations/15102952" target="\_blank">15102952</a>, PubMed:<a href="http://www.uniprot.org/citations/8999809" target="\_blank">8999809</a>, PubMed:<a href="http://www.uniprot.org/citations/9271353" target="\_blank">9271353</a>). Alternatively, can activate quinones and their derivatives by generating redox reactive hydroquinones with DNA cross-linking antitumor potential (PubMed:<a href="http://www.uniprot.org/citations/8999809" target="\_blank">8999809</a>). Acts as a gatekeeper of the core 20S proteasome known to degrade proteins with unstructured regions. Upon oxidative stress, interacts with tumor suppressors TP53 and TP73 in a NADH-dependent way and inhibits their ubiquitin-independent degradation by the 20S proteasome (PubMed:<a href="http://www.uniprot.org/citations/15687255" target="\_blank">15687255</a>, PubMed:<a href="http://www.uniprot.org/citations/28291250" target="\_blank">28291250</a>).

### Cellular Location

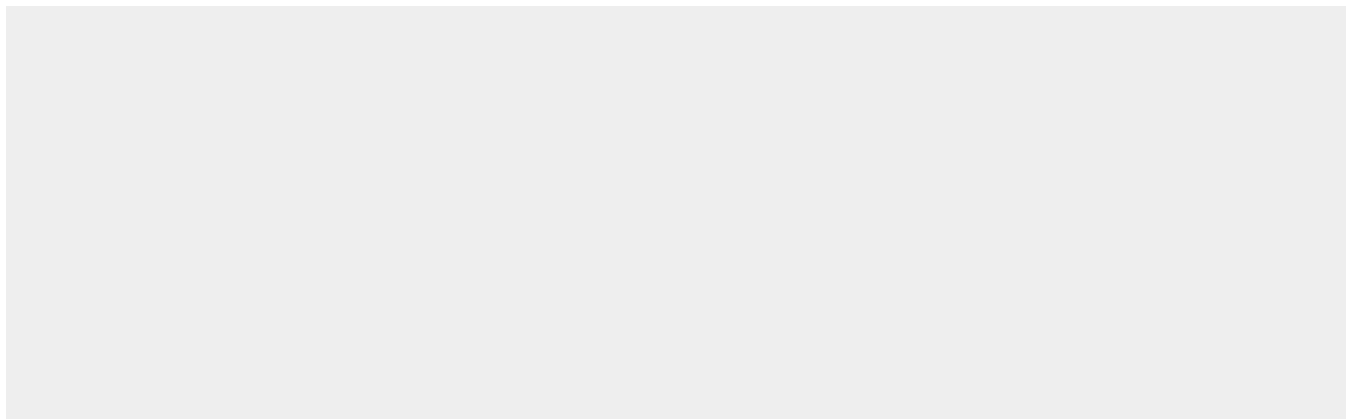
Cytoplasm, cytosol {ECO:0000250|UniProtKB:P05982}

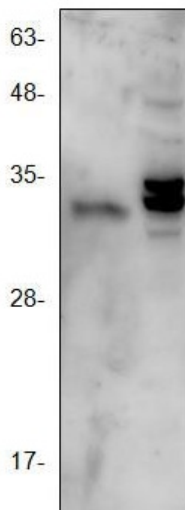
### NQO1 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### NQO1 Antibody - Images





Western blot with NQO1 antibody. Lane 1: 3T3 cell lysate. Lane 2: Rat Kidney cell lysate.

### **NQO1 Antibody - Background**

NAD (P) H:quinone oxidoreductase 1 (NQO1) and NRH:quinone oxidoreductase (NQO2) are flavoproteins that catalyze the metabolic detoxification of quinones and their derivatives to hydroquinones, using either NADH or NADPH as the electron donor. This protects cells against quinone-induced oxidative stress, cytotoxicity, and mutagenicity. Many tumors overexpress NQO1, which is an obligate two-electron reductase that deactivates toxins and activates bio-reductive anticancer drugs. NQO1, a 274 amino acid protein, is ubiquitously expressed, but the expression level varies among tissues. NQO1 gene expression is coordinately induced in response to xenobiotics, antioxidants, heavy metals and radiation. The antioxidant response element (ARE) in the NQO1 gene promoter is essential for expression and coordinated induction of NQO1. ARE activation by tert-butylhydroquinone is dependent on PI3-kinase, which lies upstream of Nrf2. Nrf2, c-Jun, Nrf1, Jun-B and Jun-D bind to the ARE and regulate expression and induction of NQO1 gene. Maf-Maf homodimers and possibly Maf-Nrf2 heterodimers play a role in negative regulation of ARE-mediated transcription, but Maf-Nrf1 heterodimers fail to bind with the NQO1 gene ARE and do not repress NQO1 transcription.