

NQO1 (H-90): sc-25591

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 bioreductive 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.

CHROMOSOMAL LOCATION

Genetic locus: NQO1 (human) mapping to 16q22.1; Nqo1 (mouse) mapping to 8 D3.

SOURCE

NQO1 (H-90) is a rabbit polyclonal antibody raised against amino acids 185-274 of NQO1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as agarose conjugate for immunoprecipitation, sc-25591 AC, 500 µg/0.25 ml agarose in 1 ml.

APPLICATIONS

NQO1 (H-90) is recommended for detection of NQO1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

NQO1 (H-90) is also recommended for detection of NQO1 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for NQO1 siRNA (h): sc-37139, NQO1 siRNA (m): sc-37140, NQO1 shRNA Plasmid (h): sc-37139-SH, NQO1 shRNA Plasmid (m): sc-37140-SH, NQO1 shRNA (h) Lentiviral Particles: sc-37139-V and NQO1 shRNA (m) Lentiviral Particles: sc-37140-V.

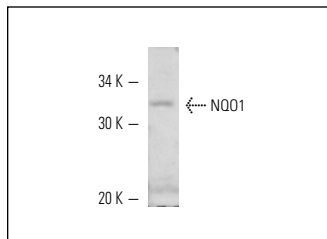
Molecular Weight of NQO1: 31 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, SW480 cell lysate: sc-2219 or HCT-116 whole cell lysate: sc-364175.

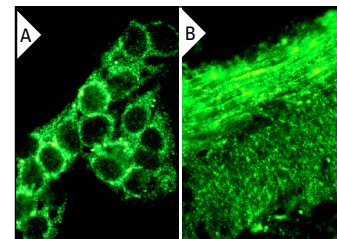
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



NQO1 (H-90): sc-25591. Western blot analysis of NQO1 expression in Hep G2 whole cell lysate.



NQO1 (H-90): sc-25591. Immunofluorescence staining of methanol-fixed Hep G2 cells showing cytoplasmic localization (A). Immunofluorescence staining of normal mouse intestine frozen section showing cytoplasmic staining (B).

SELECT PRODUCT CITATIONS

- Augustine, L.M., et al. 2008. Gender divergent expression of NQO1 in sprague dawley and august copenhagen x Irish rats. *J. Biochem. Mol. Toxicol.* 22: 93-100.
- Polytarchou, C., et al. 2008. The JmjC domain histone demethylase Ndy1 regulates redox homeostasis and protects cells from oxidative stress. *Mol. Cell. Biol.* 28: 7451-7464.
- Michard, Q., et al. 2008. TRP-2 expression protects HEK cells from dopamine- and hydroquinone-induced toxicity. *Free Radic. Biol. Med.* 45: 1002-1010.
- Bergamo, P., et al. 2008. Association between activation of phase 2 enzymes and down-regulation of dendritic cell maturation by c9,t11-conjugated linoleic acid. *Immunol. Lett.* 117: 181-190.
- Paris, I., et al. 2008. The catecholaminergic RCSN-3 cell line: a model to study dopamine metabolism. *Neurotox. Res.* 13: 221-230.
- Sakata, H., et al. 2012. Minocycline-preconditioned neural stem cells enhance neuroprotection after ischemic stroke in rats. *J. Neurosci.* 32: 3462-3473.
- Minelli, A., et al. 2012. Cyclo(His-Pro) exerts anti-inflammatory effects by modulating NFκB and Nrf2 signalling. *Int. J. Biochem. Cell Biol.* 44: 525-535.

RESEARCH USE

For research use only, not for use in diagnostic procedures.



Try **NQO1 (A180): sc-32793** or **NQO1 (H-9): sc-376023**, our highly recommended monoclonal alternatives to NQO1 (H-90). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **NQO1 (A180): sc-32793**.