SANTA CRUZ BIOTECHNOLOGY, INC.

NQO2 (N-15): sc-18574

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. This detoxification process protects cells against quinone-induced oxidative stress, cytotoxicity and mutagenicity. NQO2 is a 231 amino acid protein and is 43 amino acids shorter than NQO1 at its C-terminus. NQO2 is an isozyme of NQO1 and transfers two electrons to a quinone, resulting in the formation of a hydroquinone product. The NQO2 gene is ubiquitously expressed and induced in response to TCDD. NQO2 has a higher level of expression in mouse liver and testis than NQO1, which is highly expressed in the heart. NQO2 has a different cofactor requirement than NQO1 and uses dihydronicotinamide riboside (NRH) rather than NAD(P)H as an electron donor. Unlike NQO1, NQO2 is resistant to typical inhibitors of NQO1 such as dicoumarol, cibacron blue and phenindonee, but is inhibited by quercetin and benzo(a)pyrene. NQO2 contains a specific metal binding site, which is absent in NQO1 and several *cis*-elements including SP1 binding sites, CCAAT box, XRE and ARE, which are located at the NQO2 gene promoter.

CHROMOSOMAL LOCATION

Genetic locus: NQO2 (human) mapping to 6p25.2; Nqo2 (mouse) mapping to 13 A3.3.

SOURCE

NQO2 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of NQO2 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.

Blocking peptide available for competition studies, sc-18574 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NQO2 (N-15) is recommended for detection of NQO2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1,000), 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 1:30-1:3,000).

NQO2 (N-15) is also recommended for detection of NQO2 in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for NQO2 siRNA (h): sc-41575, NQO2 siRNA (m): sc-41576, NQO2 shRNA Plasmid (h): sc-41575-SH, NQO2 shRNA Plasmid (m): sc-41576-SH, NQO2 shRNA (h) Lentiviral Particles: sc-41575-V and NQO2 shRNA (m) Lentiviral Particles: sc-41576-V.

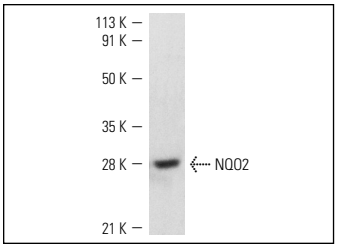
Molecular Weight of NQO2: 25 kDa.

Positive Controls: mouse liver extract: sc-2256.

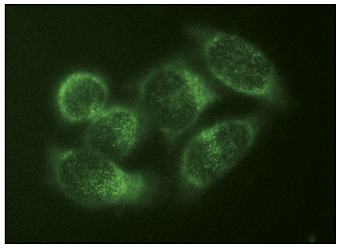
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



NQO2 (N-15): sc-18574. Western blot analysis of NQO2 expression in mouse liver extract.



NQO2 (N-15): sc-18574. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Sareen, D., et al. 2006. Mitochondria as the primary target of resveratrol-induced apoptosis in human retinoblastoma cells. Invest. Ophthalmol. Vis. Sci. 47: 3708-3716.
2. Gong, X., et al. 2007. NRH:quinone oxidoreductase 2 and NAD(P)H:quinone oxidoreductase 1 protect tumor suppressor p53 against 20s proteasomal degradation leading to stabilization and activation of p53. Cancer Res. 67: 5380-5388.
3. Ahn, K.S., et al. 2007. Deficiency of NRH:quinone oxidoreductase 2 differentially regulates TNF signaling in keratinocytes: up-regulation of apoptosis correlates with down-regulation of cell survival kinases. Cancer Res. 67: 10004-10011.
4. Shen, J., et al. 2010. Inactivation of the quinone oxidoreductases NQO1 and NQO2 strongly elevates the incidence and multiplicity of chemically induced skin tumors. Cancer Res. 70: 1006-1014.
5. Shi, Z., et al. 2010. The neuroprotective effect of Batch-2, an aqueous extract from cat's claw *(Uncaria tomentosa)* on 6-OHDA-Induced SH-SY5Y cell damage. Prog. Biochem. Biophys. 37: 769-778.

STORAGE

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

RESEARCH USE

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