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 phenindone, 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.

REFERENCES


CHROMOSOMAL LOCATION

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

SOURCE

NQO2 (A-5) is a mouse monoclonal antibody raised against amino acids 182-231 mapping at the C-terminus of NQO2 of human origin.

PRODUCT

Each vial contains 200 µg IgG1, lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

NQO2 (A-5) is recommended for detection of NQO2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:1000-1:10000), 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).

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: human liver extract: sc-363766, mouse liver extract: sc-2256 or c4 whole cell lysate: sc-364186.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG1, BP-HRP: sc-516132 or m-IgG1, BP-HRP (Cruz Marker): sc-516132-CM (dilution range: 1:1000-1:10000), 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 m-IgG1, BP-FITC: sc-516185 or m-IgG1, BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Hard-set Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA

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

PROTOCOLS

See our website at www.scbt.com for detailed protocols and support products.