**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.

**REFERENCES**


**CHROMOSOMAL LOCATION**

Genetic locus: NQO1 (human) mapping to 16q22.1; Nqo1 (mouse) mapping to 6q3.

**SOURCE**

NQO1 (A180) is a mouse monoclonal antibody raised against purified recombinant NQO1 protein of human origin.

**PRODUCT**

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

NQO1 (A180) is available conjugated to agarose (sc-32793 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-32793 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32793 PE), fluorescein (sc-32793 FITC), Alexa Fluor® 488 (sc-32793 AF488), Alexa Fluor® 546 (sc-32793 AF546), Alexa Fluor® 594 (sc-32793 AF594) or Alexa Fluor® 647 (sc-32793 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FC; and to either Alexa Fluor® 680 (sc-32793 AF680) or Alexa Fluor® 790 (sc-32793 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FC.

**RESEARCH USE**

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

**APPLICATIONS**

NQO1 (A180) is recommended for detection of NQO1 of human, mouse and, to a lesser extent, rat 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non-cross-reactive with purified human NQO2.

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.

**DATA**

NQO1 (A180) HRP: sc-32793 HRP. Direct western blot analysis of NQO1 expression in Hep G2 (A), A549 (B), AN3 CA (C), SK-MEL-24 (D), SW480 (E) and COLO 205 (F) whole cell lysates.

NQO1 (A180): sc-32793. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic and nuclear localization (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic staining of neuronal cells and glial cells (B).

**SELECT PRODUCT CITATIONS**


**STORAGE**

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

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